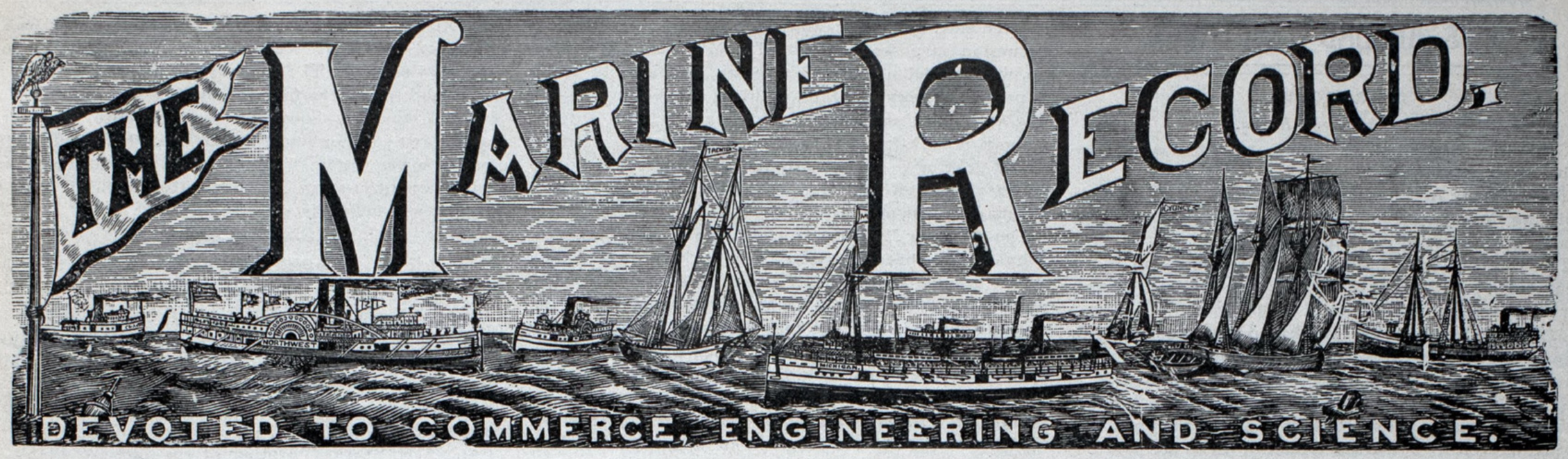

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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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EXAMINATION FOR CADETS IN THE REVENUE SERVICE.

On March 19th a board will convene at the Treasury Department, Washington, and another at San Francisco, Cal., to examine candidates for the position of cadet in the U. S. Revenue Cutter service. The examination will be competitive and will include a thorough course in mathematics and other academic branches. A fair knowledge is required also of German, French or Spanish, the candidate being allowed to select either one of the languages named. Only those are eligible who are not under eighteen nor more than twenty-three years of age, and who are in every respect physically sound. There are about six vacancies to be filled and any young man of good moral character and well recommended can apply to the Secretary of the Treasury to take the examination. The candidate evincing the highest degree of proficiency will receive appointments in the order in which they pass, provided they reach the minimum standard of 75 per cent. They will then be assigned to the schoolship S. P. Chase for a probationary term of two years, preparatory to entering the grade of third lieutenant. This is a good opportunity for a young man who may be a graduate of a high school or advanced academy, and who is fond of the sea, to obtain an officer's commission in an old established and valued service of the government. Further information on the subject will be given by the Treasury Department, Washington, on application.

OPPOSED TO DUPLICATION OF NAMES.

Mr. Eugene T. Chamberlain, Commissioner of Navigation, is heartily in sympathy with the general protest against duplication of names of vessels. He believes, however, that the simplest, most expeditious and satisfactory method of preventing this practice is to appeal directly to those interested, rather than to legislate on the subject. With that idea in mind, he had addressed the following circular letter to the collectors of customs and others in a position to carry out his recommendations:

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
WASHINGTON, D. C., Feb. 17, 1894.

To Collectors of Customs and Others:

It is represented to this Bureau that the practice of bestowing the same name upon different vessels leads to confusion and annoyance in the identification of vessels, to the disadvantage frequently of the owners and masters of vessels, charterers, compilers of shipping news, underwriters and others who have to do with shipping matters.

The matter is one in which the owners and masters of vessels and those directly interested in shipping are most concerned, and their voluntary action can correct the practice referred to more expeditously and satisfactorily than statute.

In first applications for marine documents in which it is desired to bestow upon a vessel a name already borne by one or more vessels of the same port or neighboring ports, collectors of customs are requested to bring this fact to the notice of the applicant, to the end that the duplication of names may be checked by the voluntary action of those most concerned.

EUGENE T. CHAMBERLAIN, Commissioner.

Approved: W. E. CURTIS, Acting Secretary.

DISTRESS SIGNALS.

Supervising Inspector General Dumont, of the steamboat inspection service, informs THE RECORD that the Board of Supervising Inspectors, at their late meeting, adopted a resolution which will be printed in their rules and regulations, also in the pilot rules, recommending the use on all vessels, steam and sail, of the distress signals recommended by the International Marine Conference, and known as Article 31, as follows:

"When a vessel is in distress and requires assistance from other vessels or from the shore, the following shall be the signals to be used or displayed by her, either together or separately, viz:

IN THE DAYTIME.

1. A gun fired at intervals of about a minute.
2. The International Code signal of distress indicated by N. C.
3. The distant signal, consisting of a square flag having either above or below it a ball or anything resembling a ball.
4. Rockets or shells as prescribed below for use at night.
5. A continuous sounding with a steam whistle or any fog-signal apparatus.

AT NIGHT.

1. A gun fired at intervals of about a minute.
2. Flames on the vessel (as from a burning tar-barrel, oil-barrel, etc.)
3. Rockets or shells, bursting in the air with a loud report and throwing stars of any color or description, fired one at a time at short intervals.
4. A continuous sounding with a steam-whistle or any fog-signal apparatus.

ANGLES OF ROLLING AT SEA.

A word is necessary as to angles of rolling. Nothing is more deceptive at sea, when everything about is in motion, than the apparent angle of rolling. All H. M. ships are furnished with a clinometer, which is of use in determining the angle of a steady list, but is quite useless for ascertaining the amplitude of a ship's rolling in a sea-way. The ship herself rolls about a shifting axis usually not far from her center of gravity, but the clinometer is suspended to an axis very much above this, and thus the pendulum swings from a point which is itself in rapid motion, and consequently cannot be relied on to give the angle of the ship's inclination at any time.—*Nautical Magazine.*

MARINE ENGINES FOR LAND SERVICE.

An interesting departure in engineering is the introduction of marine engines for land service, and the plan is commended by so good an authority as the *Age of Steel.* One of the great electric illuminating companies, it appears, has adopted them in its work, and concerning their economy in respect to space and power it is reported that the land engine takes up some ten times as much space as a marine engine, and the marine quadruple expansion engine has ten times the heating surface of the land engine. Further, the new quadruplex two-crank expansion engine is twice as powerful as the triple expansion three-crank engine, occupies also thirty per cent. less room, and carries regularly 210 pounds of steam; the land engine carries only eighty or ninety pounds of steam, and gets one horse power out of from four to ten pounds of anthracite coal, while the quadruple expansion marine engine develops one horse power out of one and a quarter pounds of Welsh coal; that is, according to these data, the land engine requires from two to four times as much coal as the marine engine to produce the same power.

A notable instance of this is the adoption of three Globe triple expansion engines to run the dynamos of the Cleveland City Railway Co.'s new power plant.

ADMIRAL BENHAM'S PROMPT ACTION.

Rather flattering, not only to Admiral Benham and to our merchants directly interested in Brazilian trade, but to the whole American nation, is it to find that British shipowners are growling at the superior protection given to American vessels at Rio Janeiro. As a matter of fact, it is said that thirty British vessels have been waiting at Rio since August last to discharge their cargoes, and the British government have been memorialized by shipowners to do something to assist their commerce. Admiral Benham not only thoroughly redeemed the imputation cast upon the policy of the United States by the action of Admiral Stanton in saluting the rebel flag, but his action has proclaimed to the world more loudly than anything but the eagle's shrill scream could do, that our navy is for use and not ornament alone.—*Marine Journal.*

NEWS AROUND THE LAKES.

CHICAGO, ILL.

Special Correspondence to The Marine Record.

Capt. John Nicholson will command the steamer Boscobel again next season.

The steamer Arthur Orr will go to the Chicago Ship Building Co.'s yard and receive hoisting machinery and shafting for hoisting package freight.

The International Signal Co. have placed one of the Gruschow electric signals on board the Goodrich Transportation Co.'s steamer City of Ludington.

Capt. Julius Baker has purchased the schooner H. C. Winslow from Capt. August Doerfling on private terms. The Winslow carries about 330,000 feet of lumber.

C. W. Elphicke opposes the issue of an Inland Lloyds' vessel register for 1894. He says last year's book will do just as well if the values are cut down 25 per cent.

Cook, Calbick & Co., vessel agents, have sold the steambarge A. D. Hayward for W. J. Calhoun to John R. Van Slyke, of Detroit, for $20,000. Capt. John Pringle, Jr., will command her next season.

Capt. George Warner, vessel agent, of Cleveland, is here in reference to the case of the barge Masten and tug Gillen, which is being arbitrated here by Capt. John V. Tuttle, of Milwaukee, Capt. Thrall, of Sturgeon Bay, and Capt. James S. Dunham, of Chicago.

Johnston Bros., boiler makers at Chicago and Ferrysburg, are building at their Chicago works a marine boiler 6½ by 12 feet, to be allowed 125 pounds steam pressure, for the steamer Cyclone. They are also putting two new fire boxes into the boiler of the steamer Albert Soper.

The following charters have been made: By J. G. Keith & Co., City of Paris for 95,000 bushels of corn to Buffalo at 3 cents, and Egyptian for 50,000 bushels of corn to Kingston at 4 cents, free of canal tolls; by Cook, Calbick & Co., Fred Pabst and W. H. Wolf for corn to Buffalo at 2⅞ cents, and Walter Vail for corn to Kingston at 4 cents, free of canal tolls; by Elphicke & Co., Gifford for 29,000 bushels of corn to Port Huron at 2¼ cents.

The Marine Engineers' Beneficial Associations Nos. 4 and 68 have arranged to have a headquarters for marine engineers and a rendezvous for the members of the two associations in which will be placed a library for the benefit of the engineers during their leisure hours, and where they can have a place to congregate. There will be a janitor in charge of the office at all hours. Captains or engineers desiring an engineer or assistant engineer can obtain one by telephoning while in the city or telegraphing from any port. It is the aim of the two associations to keep a list of unemployed engineers, selecting only those whom they can cheerfully recommend. The office will be at No. 2 Market street, corner Lake street, Chicago.

The recent convention of the National Marine Engineers' Beneficial Association held at Washington was well attended by representatives from Maine to California and from Duluth to Pensacola, the lake district having their full quota of sixteen representatives. The Board of Supervising Inspectors met them at their hall in Washington, at which meeting Chief Engineer Melville, of the United States Navy, together with Past Assistant Engineer Bennett, both addressed the representatives and commended the engineers in a highly eulogistic manner for the good they were accomplishing among the fraternity. The engineers made known their grievances to the Board of Supervising Inspectors as they exist in the various sections from which the representatives came. The committee on commerce also met the representatives and listened to the arguments offered for better laws and urging the enforcement of those that already exist. The engineers naturally felt agrieved at the decision of ex-Secretary Foster in the matter of the Paris and New York affair last February, in which he decided that engineers were not officers, thus permitting the alien engineers to have charge of the machinery on board of such steamships. The decision of Secretary Foster has aroused the engineers to put forth more determined efforts to have more favorable or better construed laws that will put it beyond the power of any future Secretary to construe the law to meet his own ideas, and a bill has been put before the House of Representatives in Congress and passed by them and is now awaiting the action of the Senate. The association is everywhere prosperous, notwithstanding the depression in marine circles. The associations now number 101 and cover every lake, river and sea port of importance in the United States.

MILWAUKEE, WIS.

Special Correspondence to The Marine Record.

The steamer Nebraska is at the Milwaukee Dry Dock Co.'s west yard, where she is to be docked, to have several small leaks stopped, and is then to be converted into a package freighter. Four gangways will be cut in each side, and the canopy roof which she carried for excursion purposes removed. The Milwaukee Dry Dock Co. was compelled to purchase the Nebraska in order to protect a heavy claim against her, and now would like to find a purchaser for the craft. But with a gloomy outlook for lake business people are fighting shy of floating property. Hence the steamer is to undergo alteration and be run by the company until a purchaser turns up.

The schooner J. V. Jones and revenue cutter Andrew Johnson have been towed to the south yard, where they are to occupy the stationary dry dock together. Repairs to the extent of $2,500 are to be made upon the revenue cutter in order to keep her in serviceable condition for another season. The Jones is to receive new keelsons, centerboard box, deck beams, deck, covering board, stanchions, stringers, rail, etc.

Capts. R. P. Fitzgerald, E. S. Stone and Albert Gibbs are sojourning at Los Angeles in company with Ex-Sheriff John Rugee.

The Graham & Morton Line, between Milwaukee and St. Joseph, is doing a heavy freighting business.

A. R. Fortier, chief engineer of the steamer Ferdinand Schlesinger, has arrived here from his home in Detroit, and is fitting out the Schlesinger's engine so that she will be enabled to proceed to Chicago with her own steam as soon as a 3-cent corn charter can be obtained. Engineers of the steamers Fred Pabst and W. H. Wolf are also fitting out those steamers with a similar object in view. The impression seems to prevail that charters for all three of the boats will soon be obtained.

BUFFALO, N. Y.

Special Correspondence to The Marine Record.

Since last fall the Buffalo Yacht Club's fine new home at the foot of Porter avenue has been built. It is now completed and is one of the finest club houses on the lakes. It has not neglected in the erection of its home to provide substantial and convenient sheds for the boats owned by its members. They are a great improvement over the old methods of shelter.

When the season of 1893 closed last fall most vessels of the fleet were laid up for the winter in a condition that demanded no repairs. Others were turned over to builders, and these yachts will appear on the lake this season looking clean and saucy as a result of the overhauling they are receiving.

The regatta committee, which is now preparing the program of races for the season of 1894, will not report its plans to the club before the middle of next month. It has been definitely determined, however, that the club will be represented at but one regatta abroad. That will be at the annual meeting of the Cleveland Yacht Club, and only one Buffalo boat will participate, the selection to be made later. The local club cares but little about sending boats abroad, as such expeditions are too long. It prefers to keep its entire fleet at home during the season in order to make the club regattas as absorbing as possible.

From present indications it is quite possible that the docks which have been projected for the Stony Point district will be built within the next year. Several capitalists from Philadelphia and other cities were in Buffalo during the last few days looking the land over with a determination as to what should be done in regard to the matter. It is probable that something will turn up within ninety days.

MARINE CITY.

Special Correspondence to The Marine Record.

The masts of the new steamer Mohegan have been stepped and they give her a handsome appearance. The work upon her cabins is rapidly nearing completion. It is expected that she will prove one of the largest, if not the largest wooden carriers of lumber on the Lakes. Together with her consort, the Mingoe, the tow will move 2,400,000 feet of lumber. She has all the latest improvements, including steam steering gear.

The barge G. W. Wesley, which broke adrift last week and was sunk by the ice, lies in a very bad position. The amount of her damage cannot be ascertained. Westbrook's dock, where the Wesley lay, is injured to the extent of $500. The Keepsake, with the exception of a slightly damaged stern and rudder, is all right, and it is thought that no trouble will be experienced in getting her out of the jam.

The work of tearing away the old topsides of the schooner T. Gawn is completed, and the rebuilding will be begun at once. She will be given solid bulwarks and a forecastle deck similiar to those in the Marine Transit Co.'s vessels; a new windlass will also be placed in her.

Wednesday morning of last week, the Grand Trunk transfer steamer Great Western ran into the propeller Eber Ward, badly smashing the bows of the latter. The Ward is lying below the Detroit and Milwaukee slip, and the fog was so heavy that it was impossible to see any distance. Capt. Maisonville was in charge of the Great Western, and the latter was running very slowly. The car ferry struck the Ward at an angle, and before the former could be stopped the Western had stove its bow fully five feet into the Ward, tearing away a number of stanchions. It was lucky the car ferry was light. If it had been loaded, the Ward would have been stove in under water. The damage to the boat will be in the vicinity of $1,000.

ASHTABULA, O.

Special Correspondence to The Marine Record.

Capt. F. E. Walworth, of the life-saving station, is putting in his time at the life-saving buildings arranging details for getting his crew in working order. The crew will consist of seven men besides the captain. A large number of applications have been made for membership in the crew.

Capt. J. H. Starkey, brother of the late W. W. Starkey, and keeper of the light-house at Conneaut died Tuesday morning of cancer of the face. He had been keeper of the Conneaut light-house since Cleveland's first administration. He was a member of Rising Sun lodge F. & A. M. of Ashtabula.

An Italian ore shoveler named Edward Traffe, was caught under a falling quantity of frozen ore Tuesday morning on the Mahoning and Shenanango docks, breaking his leg and badly bruising him up. He was taken to his home back of the Lake Shore offices and Dr. Dorman dressed his injuries.

Secretary Arthur Holmes, of the Fairport Fishing Co., has taken an examination before Inspector DeWolf, at Cleveland, for a master's license. Mr. Holmes sailed on the lakes for five years previous to engaging in the fishing business and is well posted on all points that make an efficient pilot. He does not take the examination for the purpose of entering actively into the service as a pilot, but that he may take the boats out when their captains are off duty on account of sickness and otherwise.

Mr. T. W. Byrns, superintendent of the Fairpor schools, had a very narrow escape from drowning on Monday, February 12. On that day the water was high, a strong current was running between the piers and the river was filled with snow and ice. Mr. Byrns attempted to row across and succeeded in reaching the center of the river when the snow and ice closed in around the boat and he was unable either to advance or retreat. Meanwhile the current was rapidly carrying the boat down stream towards the end of the piers where a heavy sea was rolling in from the lake. Had the boat entered that sea it would have been quickly swamped and Mr. Byrns would have had but a slim chance for his life. Capt. Frank Babcock, of the life saving station, witnessed his peril and hastily summoning assistance, a line was shot over the drifting boat, which Mr. Byrns caught and made fast, and he was soon in safety on the pier. It was a very narrow escape.

TORONTO, ONT.

Special Correspondence to The Marine Record.

Messrs. Doty Bros. & Co., Toronto, are placing new compound engines in the steam tugs Queen and Armstrong, now undergoing repairs at Wiarton, Ont.

Mr. George Monro, of the Custom House, who is well known by all the vessel men coming to Toronto, has gone to Mexico for a trip in search of health and pleasure.

The steamer A. J. Tyman has been chartered to run between Buffalo, Crystal Beach and Port Colborne during the coming season. She will be sailed by Capt. James McSherry.

Mr. Robt. McCall, who has been engineer of the steamer Empress of India for the past five years, has been appointed engineer of the steamer Chippewa, of the Niagara Navigation Co.'s line.

Arrangements have been made to run the steamers Acadia and Melbourne, from Toledo and Cleveland, in the passenger and frieght trade to Montreal, forming a weekly line.

Capt. J. H. Scott, of Kingston, was in the city last week. Capt. Scott has been in the employ of the late James Norris, of St. Catharines, for over twenty years, and, as the estate is being settled up, and the steamer Persia, of which Capt. Scott has been in command for twelve years, is advertised for sale, he has been appointed to sail a steamer owned by Messrs. Smith & Keighley, of this city.

COLLINGWOOD, ONT.

Special Correspondence to The Marine Record.

The Hamilton Steamboat Co. have re-engaged the same captains that they had last year. Capt. Sharpe will sail the Modjeska, and Capt. Zealand will sail the Maccassa.

Capt. McSherry will probably be appointed master of the steamer Carmonia, owned by Messrs. Smith &

Keighley, of Toronto. She is undergoing a thorough overhauling at Toronto this winter.

Among steamboat men, business is becoming more brisk every day. Spring is approaching and all must be ready to sail at the opening of navigation. Many men have signed for the season already.

A new Scotch boiler, 10 feet 6 inches in diameter and 11 feet long, to carry 105 pounds of steam, is being put into the steamer Ocean this winter at St. Catherines. The work is being superintended by Capt. A. Malcolmson, one of the owners.

The collector of customs here has been asked to forward to the Marine Department, the address of Capt. Frank Burke, who was in charge of the Canadian tug Reliance, plying on lake Huron in October last. A gold watch and chain have been received at the department from the President of the United States for presentation to Capt. Burke for heroic services rendered to the United States tug Acme, on the 11th of October. The department has no means of locating Capt. Burke except through outside sources.

The masters of the North Shore fleet will be J. W. Bassett, City of Collinwood; F. X. Lafrance, City of Midland; C. Jaques, Favorite, and A. C. Cameron, the Manitou. With the Great Northern Transit Co., Capt. P. M. Campbell will command the Pacific, Capt. R. D. Foote the Atlantic, and J. Wilson the Northern Belle.

Mr. Geo. W. Brown, of Port Arthur, has purchased the steamer Cambria from The Port Arthur & Duluth Steam Packet, Co. (Limited,) and will operate her this season between Windsor, Detroit, Sarnia, Goderich, Kincardine and Manitoulin Island ports to Sault Ste. Marie. Capt. Peter C. Telfer will be in command, and Geo. Kelly will again have charge of the purser's department. The Cambria is wintering at Owen Sound, where some new work is being put on her.

FROM THE ATLANTIC COAST.

Special Correspondence to The Marine Record.

The Pennsylvania Railroad Co. will build three new tow boats.

Fred Verdon, of Hoboken, has a contract for a twin screw boat of 200 tons, to ply in New York waters as an excursion boat.

The New York Central, by buying the New York & Northern Railroad, has added one tow boat and eight car floats to its fleet. The tow boat is the Dorothy. She is a sister boat to the El Toro, and was built three years ago by the Newport News Co.

Fred Luckenback, of No. 129 Broad street, New York, has a contract to tow the Norwegian steamer Romsdal from Tampico, Mex., to New York for $8,000. The Triton has already set out on the trip to Mexico.

Gardner & Mosher, of No. 1 Broad way, New York are about to construct a shipyard at Flushing L. I. They have secured a site in Flushing Bay and are going in for yacht work and repairs of all kinds. These gentlemen have designed a number of fast yachts, among them the Feiseen and Nado, which were recently converted into torpedo boats for the Brazilian navy.

The mariners who come to New York, the shipping, river and harbor men thereabouts and the general populace will never consent to Liberty's torch being darkened. That is what is likely to happen, however, for Congressional sanction is to be invoked for the extinguishing of the beacon. Ouly one year ago the Light-House Board expended several thousand dollars in experimenting with the lights on the statue with a view of illuminating the face and arms of the figure. The results were satisfactory, but involved a great expense which is taken from the light-house appropriation. It cost $64,757 to run the electric lighting plant on Bedloe's Island for seven years, or an average of $9,251 per year. The Light-House Board wants that money for other purposes. The board decides that as a beacon the light is a failure. As an ornament it is a gem. As an aid to navigation the light has always been shunned by mariners, but those same men love to see its brilliant rays when approaching port after a long voyage. The Light-House Board crops up again and argues that the light stands on no plane; it is too far inland to be of value in guiding vessels toward the port. In ordinary foggy weather the light is invisible. Then, too, the waterway is so broad that a vessel can run its course by compass after passing Robbins' Reef light.

CLEVELAND, O.

Ex-Congressman F. W. Wheeler, the well-known Bay City shipbuilder, was in Cleveland Saturday.

The erection of the new crane and hoisting engine at the Cleveland Dry Dock has been completed.

Local owners are said to have accepted 2½ cents on wheat, Duluth to Buffalo, for their boats to arrive.

A meeting of the finance committee of the Lake Carriers' Association will probably be held early next week.

The D. & C. Line are considering the advisability of placing one of their boats in commission about March 1. The engineers are already aboard the boats of the Lake Erie division, and they will be ready to come out as soon as weather permits and traffic justifies.

The Ship Owners' Dry Dock Co. have completed the repair work on the steamer C. B. Lockwood, which left their basin a few weeks ago, and she is once again all ready for ses, and as good as new.

Advices from New York are to the effect that Mr. J H. Wade's steam yacht, Wadena, which is now wintering in New York, is to be cut in half amidships, where eleven feet is to be added to her length.

The offices of Col. Jared A. Smith, United States engineer, are being removed from the sixth to the seventh floor of the Hickox building. The Cleveland Stone Co. will occupy nearly all of the sixth floor.

Mr. R. R. Peck presided Tuesday evening at a special meeting of lodge No. 2, M. E. B. A., to receive National President, George Uhler, who is making a trip around the lakes and visiting the lodges of the association. Mr. Uhler gave a very interesting talk Tuesday evening about the work accomplished at the national convention at Washington. He left for other Lake Erie ports to the westward on Wednesday.

Work on the Great Northern passenger steamer North Land, which has been practically suspended for several weeks at the Globe shipyard, has been resumed, and she will be pushed to completion as rapidly as possible. She will be launched quite early in the spring. Work on the steamship North West is going along rapidly, and good progress is being made in the construction of the new deep-draft freighter and the hulls of the new steel tugs.

The King Bridge Co. is preparing plans for the big iron drawbridge for the New York Central Railroad Co. The bridge is to span the Harlem river in New York City and will, with its approaches and other improvements made at that point, cost $3,000,000. The contract calls for the completion of the bridge by next December. It will be 400 feet from end to end and will swing on a central pivot and when turned will leave a clearance of 100 feet on either side for passing vessels. The lowest point will be 24 feet above the river.

Col. Jared A. Smith opened bids Wednesday, on the Ashtabula light station repair work, including changes in kitchen, dining room and cellar. Samuel Wason, of Harbor, bid $785; E. B. Cook, Harbor, $1,038.50; Horace Whiteman & Son, Ashtabula, $1,086; Samuel Austin, Cleveland, $1,095; F. E. Deike and L. E. Emgert, Cleveland, $1,175; J. A. Cook, Harbor, $1,195; George Hall, Ashtabula, $1,200; C. T. Gran, Harbor, $1,218; E. T. Harmon, Harbor, $1,246; R. A. Wogal and Geo. Champlin, Harbor, $1,250; Henry Watterson, Cleveland, $1,674; A. B. Whelpley, Harbor, $1,698.72.

ANOTHER CANAL ENTERPRISE.

A stupendous canal project is said to be in contemplation by a number of capitalists in Chicago, New York, Boston and London. The plan now said to be under serious contemplation is to construct a canal directly across the state of Michigan from the eastern shore of Lake Michigan to either Detroit or Toledo, O. A number of capitalists from Chicago, New York and Boston are said to stand ready to back the project to the extent of $50,000,000, and it is also said that the English capitalists who are interested in the Canadian Pacific road have also shown a decided disposition to render material financial aid in perfecting this work.

It is stated that preliminary surveys of several proposed routes for this contemplated canal have already been made and the feasibility of the project has already been vouched for by eminent engineers. One of the plans under consideration is to tap Lake Michigan at a point near Michigan City or New Buffalo and run the canal directly eastward to Toledo, O. Another plan is to strike Lake Michigan at Benton Harbor and thence run in a northeasterly direction to Detroit. Either of these canals would be about 180 miles long, and would save about 700 miles of lake travel which is at present necessary to reach eastern points.

Among those to whom it is stated the plans for this gigantic scheme have been submitted, and who are said to have regarded them with great favor and promised substantial support, are Nathaniel Thayer, the well-known capitalist of Boston; John D. Rockefeller, of New York; Hon. Thomas W. Palmer, of Detroit; C. P. Huntington, Frank Sturgis, of the New York Stock Exchange; A. Sturgis, of the Cordage trust, and a number of others connected with various railway enterprises in the east.

The death of Mr. George W. Childs has revealed once more the strong hold he had upon the affections of men and women in his own profession. *Harper's Weekly* for February 10th contained a striking tribute to his many manly virtues by Talcott Williams, of the Philadelphia *Press*; and the *Weekly* for the 17th will print a page of illustrations showing Mr. Childs as he appeared in his office at the *Public Ledger* building, and scenes at the funeral.

NOTES FROM ALL PORTS.

The scow Ben Brink is to be utilized as a lighter at West Superior.

The barge E. F. Gould, with a measurement of 250 tons, is being converted into a steamer at Saginaw.

The small schooner Evelyn sprung a leak in Detroit harbor and was run into the mud.

The small schoooner Christiana is receiving some new frames aft and outside planking at Detroit.

Orlando Cheney and J. H. Jones will run an independent tug line at Buffalo.

The red fixed light on Pilot Island isto be changed next spring to a fixed white with a red flash of a short duration.

James Hoyt, an Allegan County, Mich., man, is building a small steamer in which to take a trip to the Gulf of Mexico.

Rieboldt, Wolters & Co. will build a hull for the machinery of the tug Nielson at Sheboygan. It will be 72 feet long, with 16 feet beam.

There will be issued about March 1 a new vessel register for the lakes, to be known as the American Lloyd's. It is now in course of preparation at New York.

A sternwheel steamer of 50 feet keel and 12 feet beam, to draw 12 inches of water, is being built at Saginaw to navigate the Cass, Flint, Tittabawassee and Shiawassee rivers.

Capt. Ole Christianson is giving the schooner Madonna a thorough rebuild, at Milwaukee, including new frames, ceiling, center-board box, part new outside plank, new cabin, masts, etc.

Judge Swan has ordered the sale of the small steamer Imperial at Detroit on a claim preferred by John Oades. Also the sale of the steamer Magna on a claim preferred by Joseph Palmer.

It is reported that the steamers Wyoming and Florida, which have been connected with the Lackawanna line for several seasons, are now under a long time engagement to the St. Paul, Minneapolis & Sault Ste. Marie Railroad Co.'s Soo line between Gladstone and Buffalo

The new steamships which the Bath Iron Works were bidding on are for the Saginaw Steamship Co., to run on the Puget Sound. F. W. Wheeler, of Bay City, Mich., built two vessels for this company some time ago. He is also figuring on these two. Harlan & Hollingsworth Co., of Wilmington, are also giving a figure. Samuel Holmes, ship broker of Broad street, New York, has these new boats in hand.

The clay embankment which separated the river from the water-power canal on the Canadian side of St. Mary's river, broke away on Saturday morning. The pressure was too great for the wall at the bulkhead, which broke away, and 45 feet was washed out. The loss will probably be about $2,500, and cause a delay of several months, as the work will have to be discontinued until warm weather sets in. So far the canal has cost $210,000.

At a recent meeting of the stockholders of the Detroit & Cleveland Steam Navigation Co., in Detroit, the following officers were elected: President, James McMillan; vice-president and treasurer, Hugh McMillan; manager, David Carter. The directors comprise the above with W. C. McMillan and George Hendrie. The capital stock, all paid, is $1,000,000; credits, $163,160.94; bonded debt, $130,000; mortgage debt, $125,000; bills payable, $243,207.34.

The recent northeaster backed the water up Maumee Bay so that it rose above the docks along Maumee river and Swan Creek at Toledo. The schooner Anna P. Grover was lifted upon dock piling in Swan Creek. The bow of the sandsucker Commerce was lifted onto a dock while her stern settled upon the bottom and filled with water. Near the Erie street bridge the scow Mary Amelia was left sticking up on the wharf. On the east side of the river, behind the Ohio Central wharf, the steamer Transfer was lifted upon a dock. The steamer Burt was lifted upon a dock in Ash street slip. The barge Mariner broke adrift and was carried against the Pennsylvania bridge. The wind lifted a large life boat from the deck of the steamer Shrewsbury and hurled it upon the ice. Capt. Sullivan says he has not seen the water so high before in his twenty years' experience at Toledo.

TRANSFERS OF VESSEL PROPERTY.

Recent transfers of vessel property recorded in the Grand Haven customs district are as follows:

Tug John M. Miller—John Ruster to William and E. Ver Duin, of Grand Haven, one-third, $700. Steamer Arcadia—William A. Stark, of Milwaukee, to Henry Stark, of Arcadia, Mich., one-third, $7,000. Same vessel—Henry Stark to the Henry Starke Land and Lumber Co., the whole, $21,000. Schooner Vermont—Mary Burmeister. of Onekema, to Ole H. Oleson, of Manistee, one-fourth, $575. Steamer Fannie M. Rose—John Budge to Rush B. Cobb and James Stokes, of Grand Haven, the whole $3,069. Same vessel—R. B. Cobb and James Stokes to James M. Bradley, of Muskegon, the whole, $4,000.

VALE, KEARSARGE!

Lost on the reef of Roncador,
Never to sail the wide seas more!
We could better have spared a daintier boat,
The newest and jauntiest thing afloat,
Than this sturdy and gallant old dog of war,
Lost on the reef of Roncador!

In storm and thunder
She rent asunder
Her arrogant foe in the day gone by;
Then proudly we saw her pennon fly,
And our shouts went up 'neath the alien sky
For the ship that had saved her own once more.

Our pride and hope in the days of yore,
Lost on the reef of Roncador,
Where the churned foam breaks on the yellow shingle,
And the sullen currents meet and mingle.
Vale, Kearsarge! Our hearts are sore
For the loss on the reef of Roncador.

—*Margaret E. Sangster in Harper's Weekly.*

THE CHICAGO NAVAL RESERVE.

The wreck of the Kearsarge has killed the hope of the Chicago Naval Reserve that the historic cruiser would be turned over to them. At the suggestion of Secretary Herbert, says the *Inter Ocean*, Congress has been turning over to the naval reserves in the various parts of the country such of the old style frigates as can be spared from active service by the addition of the new steel ships to the navy. The Chicago reserve had asked for the Kearsarge, which was the only one of the three remaining ships available (the other two being the Nipsic and Juniata) which was not too long to come through the Welland canal, and there is little doubt that the Kearsarge would have been secured by Chicago had she not been lost. At all events, Lieut. B. M. Shaffner, who is in command, expects that by the time the battalion is ready to go on a practice cruise next summer or fall the government will have supplied a ship for the purpose.

The Illinois Naval Reserve is divided into two battalions, one of which has its headquarters in the Windy City and the other at Moline. The First, or Chicago battalion already has a membership of 200, and recruiting for the present is suspended. The organization of the battalion consists of four divisions, each one commanded by a graduate of the United States Naval Academy at Annapolis. They have the rank of junior lieutenants, while Mr. Shaffner, who is in command of the battalion, is a full lieutenant, which grade in the navy corresponds to the grade of captain in the army.

Following is the roster of the officers: B. M. Shaffner, class of 1870; E. H. Harrison, 1881; William M. Robinson, 1881; Arthur Dorale, 1883; W. J. Wilson, 1883; H. A. Allen, 1887; John A. Ubsdell, Jr., 1887; Frank Kochersperger, 1890, and Raymond B. Swigert, 1892. Horatio L. Waite, an officer of the old navy, is the paymaster of the reserve, and S. J. Jones and Paul J. Pontius are respectively the surgeon and assistant surgeon of the organization.

The act creating the Illinois Naval Reserve was passed by the last Legislature and approved June 21, 1893, and became operative July 1st following. Before that, however, a preliminary organization had been formed and only awaited an enabling act to go ahead with recruiting. The state law is in conformity with a United States statute creating a national reserve navy similar to the National Guard.

The United States statute provides for an annual appropriation of $25,000 to be apportioned among the several state organizations in proportion to their numbers. It is expected that the present Congress will increase this appropriation to $50,000.

The plans have all been made for transferring the battle ship Illinois from Jackson Park to some point on the lake front between Randolph and Van Buren streets. There it will be used as an armory and for general drill purposes. The battle ship will also furnish a most desirable club house for the members of the reserve. Another feature of the battle ship is that, though it is a "still" ship, it will serve to familiarize the members of the reserve with all the appointments of a model battle ship, and, in case they are ordered to join the regular navy, they will be quite as well prepared to do effective work on one of the new battle ships as many of the men who have spent years of service in the navy, but on the old style vessels.

The battalion has been particularly fortunate in securing a good supply of equipment from the government, along with the battle ship Illinois. Besides all the fine furniture with which the wardroom was fitted up, the battalion received a full stand of Hotchkiss rifles, cutlasses and revolvers, one Hotchkiss rapid fire gun, and a four gun battery of three-inch breech-loading rifles mounted on field carriages.

But the property of which the officers of the battalion feel proudest are the twelve boats and steam launch which the government kindly turned over at the close of the World's Fair. These boats are new and made of the very best material and in the very best manner for exhibition purposes. They comprise a complete outfit of small boats for a modern battle ship. They are all provided with oars and sails. When the weather will admit the battalion will drill in these boats, both in the execution of the manoeuvers of a fleet of ships and the regular small boat drill of making a landing from the battle ship.

With the addition of a ship like the Nipsic or Juniata the Chicago naval reserve would be in as good shape to master all the problems of naval warfare as their more favorably located brethren on the sea coast. The New York naval reserve was given the New Hampshire, a sailing frigate, and the California naval reserve got the Pensacola, steam and sails. Lieutenant Shaffner would prefer a ship propelled by both, as the young men would be able to get a more comprehensive naval education on such a boat.

Every Wednesday night the battalion meets at the Second Regiment armory, and the boys are there directed in knotting and splicing ropes, cutlass and small-arm drills and in infantry drill. On Sundays, when the weather is fine, the boys take a pull in the cutters which belong to the battle ship Illinois. Four of the boys are regularly detailed to watch the battle ship, to see that no prowler sets fire to the craft or carries off any of the valuable arms and equipment that Uncle Sam has kindly turned over to the new organization.

ALUMINUM IN MARINE CONSTRUCTION.

Much has been said in reference to this new metal, both for and against its use. It has suffered from unjust disparagement and equally irresponsible laudation. In this age of rushing matters we are very apt either to overstate a fact or do the other thing in underestimating it. Aluminum has had this experience, and the usual craze subsiding, the metal has to make its way on its own merits. It is out of the metallic button stage and the fad idea. In these modest beginnings it has only repeated the old story of progress. Electricity had its toy days. It served public curiosity in working miniature wind mills and in developing sparks on its knuckles; to-day it is the Hercules of modern forces and operates gigantic machinery. Steam had a similar pinafore experience, and materials once but a novelty are now indispensable in our industrial development. It is more than likly that aluminum will, after the usual kindergarten course, take its place with preceding graduates.

In its crude form it is the most universal and widespread of metallic substances, and is, in fact, practically inexhaustible. It impregnates the crust of the globe, and being so generally available, it simply awaits economics in extraction to be as useful as it is abundant. In this it will be found as with other metals, that cheaper methods of production will be in the usual response to urgency in demand. In iron and steel products the process of cheapening has kept pace with that of use, a steel billet of to-day being a paying product at prices that a few decades ago would have been impossible. It may be assumed that, as in the alloys of other metals, we secure conditions not found in the native product, so in aluminum, as metallurgy becomes more and more a chemical art, what it lacks in certain qualities can be supplied by scientific mixing, the basic virtues of the metal being retained.

From developments in this direction it seems that its constructive qualities are of a high order. Among other possible forms of service, that of being useful in marine construction is not the least promising. Aluminum alloy is in increasing demand in special forms of marine craft where its special qualities give it advantages over other material. It is not only used in yachts, launches and other types of light vessels, but in many parts in the make-up of the modern torpedo boat, where it is particularly serviceable in the construction of hatchways, skylights, floor plates and other forms of use. New metals are not as a rule used in naval construction without severe preliminary tests, in which decisions are not based on any other grounds than those of practical use. The freer use of aluminum by naval authorities is certainly so much in its favor. This is not assuming its use where other material is better. Its service will have its limits, but where of the needed kind the new metal has certainly a future. In lighter boats, such as yachts, it may largely displace steel; that is, where the question of cost is not uppermost, though that in time may be equalized. It is not likely, however, as some visionary friends of the metal suppose, that it will ever, except in lighter uses, displace the iron or steel that are ribs and sheathing of the giants of the seas.—*The Age of Steel.*

FLOTSAM, JETSAM AND LAGAN.

A court of inquiry to investigate the loss of the U. S. S. Kearsarge will be ordered, and it is expected will be convened at the Brooklyn Navy Yard. Capt. J. N. Miller is spoken of as the probable president of the court.

The steel ship which the Sewalls built at Bath, Me., will be followed by another by the same builders. This would seem to show that Bath is to continue as a builder of sailing vessels, with the exception that they will be of steel instead of wood.

An aeronaut says that there is the same difference in the air at the earth's surface and at an altitude of half a mile, that there is between water in a mud puddle and the purest spring water. One feels on coming down from an ascent as if one were breathing solid dust.

The first practical system of towing canal boats by electricity has just been inaugurated on the Bourgogne canal, connecting the Seine and Saone rivers, France. The power is furnished by water falling from sluices at the two ends of the canal, and the current is made steady by means of storage batteries. The trolley system is used.

The report of the Naval Stability Board, that was appointed to inquire into the defects on a number of the war ships, has been submitted to the Secretary of the Navy, in reference to the Machias and Castine. The board said that these gunboats are top-heavy and unstable and recommends that the two vessels shall be lengthened 14 feet. The estimated cost of the alteration is $30,000.

According to Bradstreets, the commerce which passed through Sault Ste. Marie canal, at the eastern end of Lake Superior, during the last navigation season, reached in value the exceedingly large aggregate of $145,446,000. Wheat and flour made $62,300,000 of the total. Of jobbers' goods, $25,000,000 worth passed through the canal, chiefly west-bound, while copper, iron, coal and lumber reached totals of from $10,500,000 to $17,500,000 each.

The Merrit Wrecking Co., of New York, has made a proposition to the Navy Department to save the wreck of the old corvette Kearsarge, now lying on Roncador Reef. The terms are said to be reasonable, but the matter will be held in abeyance by the department until the arrival of Admiral Stanton and the officers and crew of the Kearsarge at New York. Admiral Stanton informed the department prior to sailing from Colon that there was little chance of saving the wreck, and his opinion is adopted by naval officials, who think the effort to save the old craft will cost more than the result will be worth, except from a sentimental standpoint.

A fire in the Bath Iron Works, Bath, Me., February 13th, destroyed a large portion of the works. The carpenter shop, tin shop, moulding loft, machine shop No. 2, the bending shop and the big ship shop were all destroyed, and it was only by the hard work of the firemen that the blacksmith shop was saved. Machine shop No. 1, with the boiler shop and the office, were not injured. The yacht Eleanor, in process of building, was somewhat damaged by a falling derrick, and possibly her plates were warped by the heat. The government ram Katahdin and the steamer City of Lowell were at the wharf, but were uninjured. Much valuable machinery was destroyed or rendered useless. The big $50,000 windlasses for Cramp & Sons, of Philadelphia, were in machine shop No. 2 and are probably damaged considerably. The loss will probably reach $150,000, covered by insurance. The plant will probably be re-built, but at Norwich or New London.

Advices have been received of the arrival at Galveston of the Norwegian barque Elsa Anderson, having in tow the hull of an English-built brig, which had apparently been burned at sea more than 50 years ago, and which appeared on the surface of the ocean after a submarine disturbance off the Faroe Islands. The hull of the strange derelict was covered with sea shells, but the hold and under decks contained very little water. In the captain's berth were found several iron-bound chests the contents of which have been reduced to pulp, except a leather bag, which required an axe to open it. In it were guineas bearing the date 1809, worth over a thousand pounds. There were also several watches and a stomacher of pearls, blackened and rendered valueless by the action of the water. Three skeletons were also found, one of a man nearly seven feet high.

The scientific principle that a ship must displace a weight of water equal to her own weight was established ages ago. This principle was made use of by British shipbuilders of the 17th century, and then dropped out of fashion. Probably many have seen shipbuilding practiced in the rough-and-ready way; a model made adjusted to suit the eye and taste of the designer; no calculation made for displacement to the intended load line, or some rude approximation by experiment with the model, or the use of co-efficients. Such rules of thumb are superseded now by exact calculations made from drawings of ships.—*W. H. White.*

CANADIAN FISHERMEN PROTEST.

A gathering of the fishermen who fish in the waters of Lakes St. Clair and Erie and in the Detroit river off the shore of Essex county, was held in Windsor Saturday. For a long time the fishermen have been murmuring loudly in respect to the regulations of the Department of Marine and Fisheries. Inspector of Fisheries Samuel Wilmot was present and would not be convinced by the fishermen that the present Canadian fishery laws applicable to interior and seacoast waters are the worst that could be enacted for fishermen who are situated on international waters. The delegates tried to show that so many restrictions are now placed on the Canadian fisherman with regulation nets and close seasons that they have to remain idle on the Canadian shore and watch their American cousins on the other side of the water taking fish from the same body of water at all seasons with no restraint whatever. They claim that thousands of dollars annually are spent by the Canadian government in hatching fish in incubators and these are put in the international waters and by the absurd restrictions of the Canadian law preserved for the American fishermen. They agree that no restriction whatever will soon deplete the lakes and rivers of fish, but while they last they want as much profit from the enterprise as Uncle Sam's people.

Sol White, M. P. P., said special privileges should be granted to the Essex county fishermen, as it is an injustice to hamper them when Americans can fish in the same body of water on the other side of the imaginary line. The following resolution was voted on and passed almost unanimously:

"Whereas, The fish found in the international waters between Canada and the United States are owned in company by the people of these countries; and

"Whereas, It is known that the fish migrate from one side of our lakes and rivers to the other; and

"Whereas, The states of Ohio, Michigan and Wisconsin, bordering international waters, charge no license fee, they do not restrict either as to number of men or nets and have practically no close season; and

"Whereas, In Canada a heavy license fee is charged, the number of men and nets are restricted, the number of nets being recently reduced by 50 per cent.; a weekly close season is provided from 6 o'clock on Saturday night till 7 o'clock on Monday morning; also a general close season for the month of November, which practically means the prohibition of whitefish fishing along the shores of Essex county except a short distance along the shores of the townships of Colchester and Mersea; and

"Whereas, The practical result of this condition is that along the shores of most part of the states of Ohio and Michigan and opposite the county of Essex the Americans had 1,500 men engaged in fishing in the year 1889 and the value of the fish caught was $1,900,000, while in Essex county only 245 men were employed, who caught fish to the value of $229,000, therefore be it

"Resolved, That this meeting emphatically condemns the restriction placed upon the fishermen of Canada, and are of the opinion that until some mutually satisfactory arrangement for the protection of our fish can be arrived at with the United States, Canadians be allowed to fish under the same regulations as the Americans."

It is claimed that the fishery regulations now in force are causing a loss of at least $6,000,000 annually to the Ontario fishermen and that the new regulations to be enforced the coming season will surely ruin the whole fishery industry of the province. According to the figures that were produced at the meeting the fisheries on the American side of Lake Erie yield about 63,563,300 pounds of fish, while on the Canadian side the yield is only about 9,625,000; but if the Canadians had the same regulations the yield would be equal on both sides. This would show that the Great Lakes are capable of producing about 500,000 tons of fish.

No less than $10,000,000 worth of fish, it is claimed, could be caught each year only for the control of the Fisheries Department. Now they are only allowed to use 50 per cent. as many nets as formerly and then the meshes are so large that most of the fish escape. The fishermen in Ontario pay $26,400 a year in license fees, equal to $9.85 each for the 2,709 men employed. In 1892 the yield only amounted to $2,042,198 for these men.

M. E. B. A. CONVENTION--SECRETARY'S SUMMARY.

The National Convention, M. E. B. A., held their 19th annual session at Willard's hotel, Washington, D. C., on Monday, January 22. The convention was called to order by the National President George Uhler, the following officers present: National President Geo. Uhler, National Secretary Thos. F. Dowd, National Treasurer Fred. D. Cook. The national president appointed Bro. Fred Nixon of No. 35, San Francisco, to fill the vice president's chair, and Past National President Geo. P. Wilson, to the Past National President's chair; the associations were represented by 42 delegates. There has been a slight decrease in membership generally, but in some districts the gains are remarkable; all of which is due, probably, to the depression in business. The national president's report was lengthy and a masterly effort; it showed the amount of work done, and volumes of correspondence and encouragements were received from all along the line. The national secretary's report was very able, both financially and otherwise, he having written some 2,000 letters and communications during the year. The national treasurer's report showed a balance of about $1,700. The general desire of all the associations was for Congressional legislation, principally from the Lake districts. The bills already passed by Congress is the first legislation that has assumed shape to encourage them, for marine engineers have been knocking at the doors of Congress for 20 years, and this is the first sign of recognition they have received.

The encouragement received from the supervising inspectors, chairman of Board of Trade and Commerce, and Congressmen generally, also Engineer-in-Chief Geo. W. Melville, U. S. Navy, has helped the marine engineers greatly, and they have not the least doubt that the bills will pass the Senate.

For the first time in the history of this association, the National Association of Marine Engineers and the Grand Harbor of Pilots and Masters met together in the same hall and appeared before the United States Inspectors, the Board of Trade and Commerce and Engineer-in-Chief Geo. W. Melville, U. S. N., and personally stated their grievances, which were attentively listened to, all of which comes through their united action. The National Association presented Congressman Mallory, of Florida, with an emblem of the order set with six diamonds, and the national president also, for the services rendered the organization. Mr. Mallory was to have appeared before the convention adjourned, but from an over-pressure of business he could not do so, so it was arranged that a committee should wait upon Mr. Mallory's convenience. The remainder of the six days' session was taken up with the private business of the association, which can be found by the members in the regular journal published by the association, and is to be had of Secretary Thomas F. Dowd, 17 So. Jefferson street, Chicago, Ill.

BAYFIELD WANTS A HARBOR.

A meeting of joint committees appointed by the business men's associations of Bayfield and Washburn was held at the former place recently to take action in regard to memoralizing Congress in regard to the proposed appropriations for the improvement of the harbors at the head of Lake Superior. The memorial will call attention to the fact that the two places have a lake frontage of about thirty miles, the most of which is amply protected from storms, and, according to reports of government engineers, has been pronounced the best natural harbor on the chain of lakes. Attention will be called to the fact that this frontage has an average depth of twenty-five feet of water at a distance of 500 feet from shore, and that coal docks and elevators can be built on the solid ground itself without the necessity of running docks 1,000 to 2,000 feet in order to get depth of water, while the conditions are such that the harbors do not require dredging, and would save many millions of government appropriations in the course of time which might go to more needy places.

KNEW WHAT THEY WERE DOING.

There was considerable adverse comment on the American line, when the steamships New York and Paris were first brought under our flag, because all foreigners were not at once discharged from the employ and American citizens taken on instead to wholly constitute the ships' crews. The company might have made reply by a contrast with the American navy, in which the majority of the men are not only anything but American citizens, but stand no chance under existing laws of becoming citizens while serving on a warship, which they would if they served on an American merchant vessel a certain time after taking out naturalization papers. But the company, while declining to take the public into their business secrets, made no explanation, nor were they swerved from their course of action, which, by recent developments, shows them to be fully and thoroughly American. Not only are they now doing all the work of docking and overhauling these ships at an American port, the annual overhaul of such transatlantic liners being hitherto unknown on this side of the ocean, but we find that the crews are being changed from their foreign complexion. Prior to the departure of the New York for her overhauling at Newport News the entire crew of her engine department were transferred to another ship to be taken home to England and paid off there, while a new crew of American citizens were selected to take the ship down to Newport News, with the assurance that if satisfactory they would be retained afterward and the preference given to Americans of equal ability hereafter. This is another act of patriotism further commending this line to the patronage and best wishes of all Americans. They are resisting all temptations toward assisting other nations.—*New York Marine Journal.*

LONGEST JETTY IN THE WORLD.

At the mouth of the Columbia river the United States government is building what will be the longest jetty ever constructed. It will also enjoy the distinction of being one of the very few public works with ultimate cost far short of the origing estimates.

The Columbia is by far the largest river west of the Rockies, being considerably over 1,000 miles in length, and for 100 miles from its mouth navigable for the largest ocean vessels. At its mouth, too, is a splendid harbor, capable of sheltering in safety the largest vessel afloat. It is the only safe harbor between San Francisco, 600 miles to the south, and the straits of Juan de Fuca, 200 miles to the north. However, prior to 1885 the harbor was of little use, because of the shifting sands that opposed a bar first to one side then to the other, and all the way from Cape Disappointment on the north to Point Adams on the south. The United States government, recognizing the value of this harbor to our commerce, both present and future, sent her most competent engineers to survey the harbor and present a plan to form a permanent deep water channel. The plans that were finally adopted were for a jetty from Point Adams out into seething waters for between four and five miles, to be constructed of basaltic rock or lava. This, it was predicted, would entirely close up the south channel or Tillamoke chute and present a firm break to catch the sands that would otherwise form the shifting bar in the north or main channel. That affected, the powerful current of the vast body of water which the Columbia pours into the Pacific would keep open a natural and perfect gateway into the harbor. The jetty is now practically completed and the engineers' predictions fully realized. On the south side of the jetty, where formerly there was water from 6 to 20 feet in depth, is now over 4,000 acres of dry land, formed by the wash of the sea, while the largest ocean vessels sail without aid through the main channel and anchor in the harbor one mile further inland, within a cable's length of the shore.

But the surprising part of the building of the jetty, and that which reflects great credit upon the engineers in charge, is that while the construction is pronounced first-class throughout and everywhere up to specifications, the total cost will fall short of the original estimate by more than $1,500,000. Careful and intelligent computations made in 1882-1884 placed the necessary total cost at $3,700,000. Thus far the requisitions have amounted to but $1,637,000, while less than half a million dollars more will pay every bill on its account. In fact the jetty itself is completed, receiving only some finishing touches, but two smaller supplementary jetties are being added to perfect the action of the main structure.

The jetty is over four miles long, 15 feet wide at the top, and built up to high water mark. The lava blocks that form the filling were quarried near Portland and transported in barges and by rail to the point where needed. Over 6,000 piles were driven in the space covered by the jetty, the piles being forced down by a huge hydraulic pile-driver. This powerful driver, with its 6,000-pound hammer, rests upon a tramway and is moved forward as required, while the entire framework revolving upon a wheel, whose radius is 31½ feet, admits of operating the machine through a corresponding large circumference. The huge hammer, however, was but seldom used in driving a pile, except to give the final blow or two that "set" the long timber in its bed of sand. When sinking a pile, the hammer was allowed to rest on its head. Two 2½ inch iron pipes on either side of the pile sent streams of water, forced by a duplex power pump, to open the sand beneath, and the weight of the hammer alone was sufficient to settle the pile. The construction has been done entirely under the charge of United States Engineers Powell and Thos. H. Handbury, the latter having been in charge since 1888. None of the work was let out by contract; day labor at eight hours for a day's work, under the direct supervision of the government officers, has accomplished the satisfactory results obtained. A model of the jetty, representing 400 feet of its length, was exhibited at the government building at the World's Fair, and attracted the favorable comment of both home and foreign engineers who inspected it.—*American Contractor.*

The question of reducing the wages of chief engineers on the Great Lakes comes up again this spring in planning the summer campaign. Why not give the captain a wrestle on this point? Chief engineers seem to be the ones to be called down every summer. They get now $110 to $120 per month for say seven or eight months in the year if they are lucky, which is about the pay of a policeman in New York. To cut engineers down to $100 as has been proposed will not net the company who do it one cent. They may save at the spigot but they will find at the end of the season that the bung-hole leaked fearfully.—*Engineer.*

The Marine Record,

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CLEVELAND, O., FEBRUARY 22, 1894.

IN spite of the dull outlook in England for the transfer of ships already built, shipbuilders on the Clyde are anticipating a busy season, and, in view of a rush of orders, have decided to raise prices for new tonnage five per cent. May they not be disappointed!

THE crew of the Kearsarge and Admiral Stanton, who arrived in New York yesterday, say the Kearsarge was fast going to pieces when they abandoned her, and that she is by this time a total wreck. This will preclude the sending out of any sentimental wrecking expeditions.

THE directors of the Hamburg-American line are prosecuting the *Lokal Anzeiger*, the only paper in Berlin which published as a fact the rumor circulated to the effect that the Augusta Victoria, of the Hamburg-American line, had been lost. The law provides that such an offense can be punished as a misdemeanor. Such a law is badly needed in this country, and on the lakes especially, where sensational dailies are so prone to announce the loss of a steamer if she is more than a couple of hours overdue in stormy weather.

THE Ann Arbor ferry No. 2 had a test of endurance the other day, her conduct during which should redound greatly to her credit. During the storm in Lake Michigan last week, in which the Roanoke, a steamer of the ordinary type, suffered such hardships, the Ann Arbor No. 2, with a full train of twenty loaded cars, crossed the lake from Kewaunee to Frankfort. At the latter port she took aboard another train and returned across the lake in the teeth of the wildest gale of the winter on Lake Michigan. This certainly establishes the success of properly constructed lake car ferry lines.

WE are glad to state that the current report noticed in last week's issue that adverse action of the Board of Supervising Inspectors with regard to coil boilers is the result of a misconstruction of a recent ruling. General James A. Dumont says that no action was taken or contemplated on this subject other than as determined by the hydrostatic pressure applied, which is double the steam pressure. Except in cases where large steam drums of riveted plates are used, boilers will be allowed steam pressure of two-thirds the hydrostatic pressure on certification that the pipes or tubing have been properly tested previous to the construction of the boiler.

THE Centennial committee of the Cleveland Chamber of Commerce very properly recognizes the fact that any celebration of the city's progress and prosperity, would be sadly incomplete without a marine feature, which the committee refers to prophetically as "the nucleus or center of interest for the occasion." "Without entering into the details of the enterprise," says their report, "we would respectfully submit that an inland marine exposition, more than anything else, prove a most novel, attractive, and instructive object lesson of the leading factor of our prosperity, we may say its foundation stone and substantial superstructure. Such an exhibition, while it may be kept within comparatively modest limits, and might be housed in either of our new armories, would include models of craft from the ancient schooner to the modern steel steamship; the various labor-saving appliances for the handling of coal and ore; charts and diagrams showing the growth of commerce on the Great Lakes; some representation of our fisheries, our life-saving system, and our light-house service, and many other objects of interest and value." The report also suggests a naval parade in honor of the occasion.

MOVEABLE PROPELLER BLADES.

Less than a year ago the ardor of a Cleveland, O., machinist was severely dampened by consulting engineers, local draughtsmen and ship masters assuring him that moveable or reversing propeller blades for large or even moderate sized steamers, adjustable when under way was not only impracticable but would prove a commercial and constructive bugbear; consequently he was advised to throw his plans, moulds and model into the lumber room and resume the ordinary tenor of his way until he could think out a thought of ordinary practicability on the general lines of commercial and transportation economy now so much desired.

It is of course beyond our province to vouch for the plan as originating in the brain of the Ohio mechanician, or even that he was one of the inspired who aspired to turn the "grey matter" of his antecedents into dollars and cents, as according to Bourne's "Treatise on the Screw Propeller," Woodcroft in 1844, Hay in 1845, Macintosh in 1847, Griffiths in 1849, and Woodcroft again in 1851, invented mechanism, some placed on the outside and others on the inside of the boss of the propeller, for moving or feathering the blades. However, suffice it to say, that to our best knowledge, his feathering, reversible, automatic propeller blade theory, whether original or otherwise, was sat down upon and squelched by presumably superior talent and experience.

Leaving the Cleveland inventive genius and his ci-devant advisors on one side, we step across the Atlantic with our readers, and find the marine engineering community from London to Calcutta greatly exercised over the contribution of a paper to the engineering institutes, wherein Robert McGlasson advocates and demonstrates the economy, safety and simplicity of "reversible screw propellers and non-reversible engines," pithily preluding his paper by casually admitting, that, "the propeller is the chameleon of marine engineering, and that we might as well search for a spanner to suit all sized nuts, or a sail area that will suit all winds, as for a fixed propeller that will suit all conditions," logical assumptions which are of course incontrovertable.

The consensus of opinions relative to Mr. McGlasson's invention so far coincides with the views offered by the Cleveland inventor, though it is but fair to say that the reversible propeller blades, changing the pitch of screw from the deck while the steamer is under way, and without slowing down, is already an accomplished and successful system, although so far only experimented with and in some cases adopted in small tonnage.

It is noticeable that throughout the discussion little weight has been placed on the non-reversible feature of the engines, for, although the screw merits the main attention, the continuous rotation of the shaft in one direction is in itself an element of safety not to be lost sight of in these days of broken shafts, as, whatever causes may have been assigned for fractures and breaks in the past there can be no doubt that long shafts, after being run in one direction for a considerable period of time, admit of the range of the metal accommodating itself to that line of stress, and changes with heavy strains on another line of rotation may in a measure account for past accidents.

Whether the reversing screw propellers and non-reversible engines become a commercial success, and to do so the system would have to be adopted in the cargo carrying trade of the world, or, whether meteor-like, McGlasson's invention is destined to shoot brilliantly athwart the technical horizon of marine engineering experts and fall silently into space, or eventually succeed on modified lines, time will tell; but in any case Mr. McGlasson has revived, if not originated, a new line of thought which entitles him to the thanks of the maritime community throughout the world.

PERILS OF THE ENGINE ROOM.

Public attention has been again most painfully drawn to the dangers imminent to life and limb on board one of our modern high-pressure steam boats, by the terrible results of the bursting of a steam pipe on board the German iron-clad Brandenburg last Friday morning, outside Kiel harbor.

The vessel had just undergone an extensive overhaul, including the fitting of new boilers; and was on her forced draft trials when the explosion took place, resulting, it is said, in the death of forty-six men and serious injuries to a large number of others. Details are not yet at hand as to the cause of the pipe giving way, but no doubt a thorough investigation will be made into the whole circumstances, and the blame placed where it properly belongs.

Since the introduction of high steam pressures for triple and quadruple expansion engines became general, there have been a most alarming number of these burst steam pipe accidents, and in all cases attended with fatal results, an instance in the cases of the steamships Simeon, Jumna, Blackburn, Workington, Elbe and Sinope, also in one of the London electric light stations; and it is to be noted that the work which gave way did not come out of any second class workshops, but from that of some of the very first class engineering works on the European continent, which fact ought certainly to have been a guarantee that the workmanship and materials, and the fitness of that material for the special purpose, would be all that could be desired. Be that as it may, the fact remains that these steam pipes have failed, not once, nor twice, but frequently, and surely it is time to call a halt, find out what is wrong, and if necessary, to alter the practice at once. In the United States Marine we have been a great deal more fortunate with our steam pipes, having no such terrible accidents to record; but these failures abroad should keep us ever alive to the necessity of keeping up our present standard of work and design, and when we make an advance in steam pressures to make a corresponding advance in the parts subject to that pressure. The consequences of the failure of a steam pipe on board ship are so greviously, so utterly deplorable, so entirely dreadful, that words fail to exaggerate the importance of making all steam pipes—and other fittings about a boiler—absolutely safe—not relatively safe—and any engineer who does not comply with this condition is guilty of criminal negligence. Steam pipes are only second to the boiler itself, as far as danger is concerned, and should therefore be subject to the same rigorous tests and examination, not only when being fitted for the first time, but annually; and the great uncertainty of copper as a material for steam pipes of 7 inches diameter and over, whether brazed or solid drawn, should make inspectors and engineers particularly careful to examine and make certain that the thickness is sufficient for the pressure, the bends are the easiest possible, and that the material has not suffered while being worked into shape; and no expense should be spared to have them perfect in every way.

DEPRESSION IN SHIPPING.

Though it is generally understood that depression in the shipping trade is not limited to the lakes, this has not been made so clear to us as now that we are in possession of Messrs. H. E. Moss & Co.'s circular which shows a large increase in the number of modern steamers for sale. The circular says:

"Lloyd's Register official returns for the shipbuilding operations of 1893 having been issued, we have now sufficient data at our disposal to form a correct judgment of the mercantile tonnage turned out during the year 1893 and to compare it with the output of previous years. To a certain extent these returns are satisfactory, inasmuch as they show a reduction of tonnage as compared with 1892 of about 30 per cent, the exact figures being 1,131,000 tons in 1892 and 836,383 tons in 1893, and as compared with 1889 a total reduction of 57½ per cent, the output in 1889 being 1,332,889 tons; yet even with this reduced production the feeling is unanimous among shipowners—that the tonnage built and to be built is in excess of our actual wants, and in consequence the hopes we all entertained of a revival of freights to yield a living profit early in 1894 must be relegated to a more distant period and may even not be arrived at in the current year.

"Under these circumstances it is our duty to our correspondents to urge on them extreme caution and to confine their operations to replacing their obsolete tonnage with modern and economic vessels able to compete with others on equal terms, or to supply any known commercial wants with suitable tonnage.

"We have no doubt pulled through worse times and shall do so again and we believe it is a matter of great importance and it is our true policy to have the most completely equipped steam fleet and of the most modern type, whatever sacrifices might be involved at the moment—and thus lead the van as heretofore in the carrying trade of the world.

"Prices for building are exceedingly low and builders anxiously compete for orders, but prices were still lower in 1888.

"A considerable number of old vessels have changed hands during the last half of 1893, owners of these vessels having at last realized the fact that it was better for them to face a present loss than to hang on to tonnage that they could not work profitably and that reduced in value each succeeding year—in addition to other causes, the falling away of dividends has induced shareholders to put such pressure on managing owners that they were compelled in many instances to accept current prices.

"We regret we cannot speak more favorably of steamer freights, in some few cases Eastern freights have hardened and during the coal strike small coasters had very remunerative rates, but this has now receded to normal rates and the profits on voyages of every descripion is a very bare one."

From this it would seem that the depression, both in ship building and ship working, is at least as severe and has been as long standing on the other side of the Atlantic as with us. Let us hope, however, that our troubles have now touched the zero mark and that an agreeable rise may soon be realized.

LLOYD'S REGISTER,

Ever since the tour of the lake shipyards, undertaken by Messrs. Cornish and Thearle, in the interests of "Lloyd's Register of British and Foreign Shipping," it has been a foregone conclusion that particulars of the cream of lake tonnage would be inserted in that register for the benefit of foreign underwriters. It is now learned through the secretary of the association, that nearly all metal vessels built on the lakes will be included in the next edition of the Registry.

There are, no doubt, those who think that this innovation means a bid for patronage in the classification and rating of lake-built tonnage. Such, however, is not necessarily the case, nor is it of any moment to the Register association whether it classes the tonnage or otherwise, so long as authentic particulars relative to the risks may be placed in the hands of underwriters for their future guidance in the business relations entered into between assurer and assured. Any iron or steel vessel, sail or steam, holding a good class in the Shipmasters' Association's "Record of American and Foreign Shipping," New York, in the "United States Standard," of New York, or the lake department of the "Bureau Veritas," will receive due credit in the surveyor's report forwarded to the Lloyd's classification committee for final insertion of the vessel's standing in the register. Relative to surveyor's reports, master and owners can not, with any degree of courtesy, refuse to permit an inspection of their craft, and if they did in isolated cases, particulars of construction, equipment and keep-up would be otherwise obtained, though perhaps not with so much credit to the vessel as a personal inspection in such cases would afford.

It is clear, therefore, that while the construction, condition, seaworthiness, etc., of the entire lake fleet might be furnished through the Register to foreign underwriters, it would not follow that a single ton need be under the class and rating of the registry association. Of course, if the owners of modern high classed iron and steel freight and passenger steamers considered that it would facilitate the placing of insurances at a minumum rate, by their tonnage being classed in Lloyd's Register, they have but to make application for a survey and accept the rating granted by the classification committee, at the same time, it is only candid to observe, that we do not believe or expect that even the slightest pressure will be brought to bear in seeking the classification of lake tonnage in "Lloyds' Register of British and Foreign Shipping."

A SERIOUS OMISSION.

It is passing strange that the members of the United States Life Saving service are not entitled to the benefits of the national marine hospital, nor is there any adequate provision made for these "wards of the nation" in lieu of the above privileges, which they should rightfully enjoy. The rank and file of life-savers, that is to say, from supervising inspector to surfmen, are recruited from the erstwhile rope haulers of the mercantile navy, ocean and coastal, and any physical or constitutional defects which, under different conditions, may develop in after life could in nearly all cases be traced to hardships formerly undergone in the merchant service, and therefore originating at a time when, if "Jack" was endowed with a sense of regard for his future health and well being, he would probably have availed himself of his marine hospital privileges, and so staved off inconvenient afterclaps. Many of the members of the life-saving service have no doubt paid, or had deducted from their wages, the forty cents per month formerly charged all seamen for hospital fees in support of the national institution. Their pursuits are still closely allied with their former occupation, as they are seamen or nothing, *per se*, rightfully entitled to all hospital benefits. All keepers of stations should write to Congressman Wise, of Virginia, and strengthen his hands and heart in the measure which he has introduced before the House of Representatives as seeking for an extension of the marine hospital privileges to keepers and surfmen of the life-saving service, a righteous and beneficent feature, which the superintendent general, S. I. Kimball, and corps of officers doing duty in the service no doubt heartily support.

OFFICIAL INVESTIGATION OF WRECKS.

In advocating the formation of a wreck court of inquiry whose duties would be to ascertain the primal causes of abandonment, total losses, collisions and other serious casualties resulting in loss of life and property, we have time and time again pointed out that if "the powers that be" did not take hold of this matter at an early date, the maritime fraternity of the lakes would very soon take the "sow by the ear," as it were, and insist upon the straight and narrow path being followed. If nothing can be learned from a technical standpoint relative to the many "incomprehensible" strandings, founderings, etc., which annually take place, the formality of inquiring into the causes which led up to loss of life through the above mentioned catastrophes ought to be the least which the fraternity should expect from an impartial departmental investigation. In this connection the Vessel Owners and Vessel Masters' Association of Chicago at a recent meeting passed a resolution calling on the supervising inspector of steamboats to hold an official inquiry into the total loss of a schooner with all hands sunk through collision on Lake Huron last June. Of course, it is all wrong for steamboat inspectors to seek to control or supervise the actions of unlicensed officers in sailing craft. Such duty properly belongs to the Commissioner of Navigation, if to any at present constituted authority. It is also wrong for local inspectors of steamboats to sit in judgment when the technical knowledge, skill and aptitude of steamboat officers are called into question, for within thirty days previous to the inquiry the selfsame judges may have vouched for and certified to the competency of those whose demerits they are so shortly afterwards called upon to lay bare before a watchful and intelligent fraternity. The chief of the steamboat inspection service has circularized the department relative to holding wreck courts of inquiry; now let his mandate go forth to furnish the public with some reliable evidence relative to the June disaster on Lake Huron.

CHICAGO COARSE FREIGHTERS—THE V. O. AND M. A.

Special Correspondence to The Marine Record.

A largely attended meeting of the Vessel Owners' and Masters' Association was held at the Ship Masters' Association hall, Chicago, last Friday afternoon. President Thomas Clark was in the chair. Secretary F. B. Higgie gave a list of the lumber merchants who have been called upon by committees and their views upon the matter of loading and unloading association vessels at the schedule rates adopted at last week's meeting. The lumber merchants who had been visited were in favor of the rates and plans of the association. Further time was granted to the committee to visit and consult with the balance of the lumber merchants of the city and secure their co-operation.

Capt. J. S. Dunham offered a resolution which was unanimously adopted, pledging those present to stand by any arrangement the association might enter into with lumber merchants for unloading their vessels. A resolution by Capt. J. A. Calbick to instruct the secretary of the association to write to lumber mill owners and ascertain their views with reference to putting lumber over the rail of vessels or loading them entirely, was adopted. The committee which waited upon the tug companies to ascertain their views as to lower towing rates, reported little success. Capt. Dunham, who was present at the meeting, said he would do all he could to aid the association, and would become a member. He considered that the small schooners paid too much for towing, but the fact that the tug companies gave them such long tows up Lake Michigan made towing very expensive, and was an offset to the high rates. Capt. John G. Keith moved a resolution that the vessels enrolled in the association shall not take a tug below Grosse Point, and that a deduction of towing rates be made to correspond. The resolution was unanimously adopted. Letters from Capt. Ole Hansen, of Manitowoc, and Thomas R. Lyon, lumber merchant at Ludington, approving the action of the association, were read. Milwaukee vessel interests were represented by W. E. Fitzgerald, J. W. Pauly, Sam Neff, E. Small, Fred Schwerman, W. L. Wanvig and A. Christianson. Another meeting of the association will be held Friday afternoon, February 23d.

OUR BIG SUPPLEMENT.

The Cleveland MARINE RECORD last week presented a handsome supplement engraving of prominent lake built steamers, combining with a handsome picture an instructive feature by demonstrating for strangers to frest water navigation the good points presented by the principal types of lake tonnage. It is a bird's eye view of nine steamers of different designs constructed since 1862.—*New York Marine Journal.*

THE MARINE RECORD, (Cleveland, Ohio) of January 25th, contains a large and beautiful supplement showing well executed pictures of the largest steel passenger and freight steamers built on the lakes, the production of the American Steel Barge Co., (whaleback steamer Christopher Columbus) Globe Iron Works, Chicago Ship Building Co., Cleveland Ship Building Co., Craig Ship Building Co., Toledo, Ohio; F. W. Wheeler & Co., West Bay City, Mich.; Union Dry Dock Co., Buffalo, N. Y,, and others. Messrs. Smith & Swainson, proprietors of THE RECORD, are to be congratulated on their enterprise in getting out this elegant supplement, which is well worth framing. The painting from which the engraving was made was executed by Howard Sprague, the Jacobson of the lakes.—*American Shipbuilder, New York.*

The Cleveland, O., MARINE RECORD has presented its readers with a most handsome and instructive souvenir, in which is assembled pictures of some of the most characteristic steamers that have sailed or do or will sail the Great Lakes. The small steamer in the lead was one of the pioneer steam vessels of modern lake navigation. She was built by David Bell, of Buffalo, in the year 1862, and has been out of existence for a number of years. The Christopher Columbus gives a representation of the whaleback type, and on her starboard quarter is the new steamship North West, just now afloat. The City of Alpena and City of Toledo represented two of the finest sidewheelers on the lakes, and the Manitou is almost the finest boat that plies Lake Michigan. The Alva, Chemung and Centurion are some of the finest specimens of model lake steamers. —*Canadian Manufacturer, Toronto.*

NOTES OF THE MINES.

The Lake Superior Mining Institute will meet at Houghton, Wednesday, March 7th, 1894.

On the first of the month there was about 65,000 tons of ore in stock at the Canton. A conservative estimator places the amount that will be mined by May 1 at 125,000 tons.

At the Buffalo a few men were placed at work last week in the new shaft which was sunk to reach the new ore deposit discovered with the diamond drill last year. The Buffalo is looking well throughout, and is in good hands.

The Norrie mine at Ironwood, Mich., which has been operated with a day shift only, has put on a night shift of 80 men. The Norrie, East Norrie and Pabst mines are now furnishing employment to 750 men, and the Newport to 115.

The Winthrop may cease operations the first of the coming month. The management is now seriously contemplating such course. The company has made no sales, they have considerable ore on hand, and are dissatisfied with the present outlook. It is hoped they may decide to keep in operation, but chances seem to be against it.

The Ohio Mining Co., owning a Mesaba range mine, Wednesday took possession of its mine, which had been leased on a 65 cent per ton royalty to Central Pennsylvania furnace operators. The latter had paid $105,000 as a cash bonus for the lease and had done over $50,000 of development work, all of which reverts to the Ohio Co., by reason of the default of the Pennsylvania people in mining and paying for an agreed output.

The stock piles of the Negaunee Mining Co., the Jackson Iron Co. and the Blue Iron Mining Co., of Negaunee, were levied on last Friday by the treasurer of the city of Negaunee, because of the refusal of the companies to pay their taxes. On the 24th inst. the stock piles will be sold at public auction to the highest bidder. The Iron Cliffs Co. has also refused to pay its taxes, but the city has not yet taken any action with reference to levying on its property.

The Pewabic Co. is now employing about 375 men at the mine and about thirty men chopping cord wood. There remains but three-fourths of a million feet of logs to come in to complete the winter's contracts for 4,000,000 feet of mine timber. The product of the month was 14,000 tons and the February out put will be somewhat larger. There is 50,000 tons in stock, and when we say that it will show an average analysis of 65 per cent. iron, with less than .009 in phosphorus, the fact that this mine is being wrought while many of its neighbors are idle, is accounted for in part.—*Norway Current.*

Capt. A. Gulgren, of Iron River, has been in the city all week in charge of Paul Hohlfeldt's exploration in Sec. 11, 22-33. A test pit is being sunk, and Mr. Hohlfeldt is satisfied that he will find a paying iron mine there in the near future. Capt. Gulgren says the specimens of ore already found are of splendid quality but is not yet prepared to say how much of a body there is, but thinks it very probable that a mine will be developed there before long. An iron mine so near Escanaba would be a veritable bonanza.—*Mirror.*

The Foxdale Iron Mining Co., which is composed principally of Ishpeming men, has secured a new lease of the mining property it is developing from the owners of the fee. Under the new lease the royalty has been reduced from forty cents a ton to twenty-five, and the royalty due for the past three years has been remitted in addition to this. Under the new terms the company will pay royalty only on the ore sold. Under the old lease royalty on non-Bessemer was twenty-five cents and forty cents on Bessemer. The company is well pleased with the new lease and much encouraged by the liberal disposition manifested by the owners of the fee. At present work at the mine is confined to keeping the water out, but the company anticipates resuming mining operations within the next few months. Since the work of developing the property was started, $26,000 has been expended in sinking a shaft and exploring the ground. The shaft is down about 175 feet, and is bottomed in a fine, hard Bessemer ore. The company does not owe a dollar and has money in the treasury.

MARITIME LAW.

DONNELLY v. THE A. CROSSMAN et al.

District Court S. D. New York. October 31, 1893.

COLLISION—STEAM VESSELS MEETING—LOOKOUT—DELAY IN SIGNALING—FAILURE TO REVERSE. The steamship M., coming down the East river above the bridge, found herself embarrassed by various tows ahead and on the New York shore and therefore kept towards the Brooklyn shore, giving two whistles to the leading tows, and passing them on her starboard hand. The tug C., going up the river astern of the above mentioned tows, and having libelant's scow in tow on a hawser, also received two whistles from the M., when the latter was very near. Having previously given insufficient attention to the M., the C. gave one whistle, and headed more to the Brooklyn shore, but the steamship struck libelant's scow. Libelant brought suit against the C. and against the pilot of the M., the latter steamship not being found within the jurisdiction. Held, that the inattention of the C. to the position and course of the M., the delay in signaling on the part of both vessels, the attempt of the C. to cross the bows of the M. towards Brooklyn, and the failure of the M. to reverse when the C. was seen, all contributed to the collision, and hence, that both defendants were in fault.

In Admiralty. Libel for collision. Decree for libelant.

Brown, District Judge. On the 22d of March, 1892, about 2 p. m., the Spanish steamship Murciano, bound down the East river, when a little below Catharine street ferry, on the Brooklyn side, and probably about three or four hundred feet off the Brooklyn shore, came in collision with the libellant's scow Arthur D., which was in tow on a hawser from the steam tug A. Crossman, and about 200 feet astern of her, bound up the river, by which the libelant's boat was considerably injured. The above libel was filed to recover the damages against the tug Crossman, and against the respondent Nathan Wood, who was the pilot in charge of the Murciano, the steamer herself not being found within the jurisdiction.

The testimony in the case is conflicting, and there is much confusion as to many of the facts. The principal facts as I find them, are as follows:

When off Jay street, Brooklyn, the pilot of the Murciano found the middle of the river on the New York side embarrassed by at least four different tows, all only a short distance below the bridge; while ahead of him, and towards the Brooklyn side, was a James street ferryboat, about to round for her New York slip just above the bridge. It was not prudent for the Murciano to keep on and go among these several tows in the middle, or on the New York side of the river, and she properly, therefore, kept toward the Brooklyn side. Above Jay street the Murciano had been going at only half speed; at Jay street she was reduced to dead slow; and off Adams street her engines were stopped, with the intent to wait above the bridge, and on the Brooklyn side, until all the tows had passed up under the bridge, so as to avoid being carried against any of them by any sheer to starboard that the steamer would be liable to when the flood current struck her port bow if she went on. Accordingly, when off Adams street, being then about one-third the distance across the Brooklyn shore, she gave a signal of two whistles to the leading tow, which was answered by two; and soon after she gave another signal of two whistles to the other tows, as they approached the bridge. According to the testimony for the Murciano, a third signal of two whistles was given to the Crossman, which was answered by her with one whistle. The witnesses for the Crossman testify that the signal given to her was before the signals given to the other tows; and that the steamer's signal was a signal of one whistle only. I am persuaded, however, that this is a mistake, and that the Murciano gave no signal of one whistle at or about that time. The situation and the circumstances render it wholly improbable, and the direct evidence on her part to the contrary should be accepted as correct.

That the Murciano's headway by land was nearly, if not wholly, checked at the time of the collision, is sustained not only by the direct evidence on her behalf, but by the fact that the libelant's scow, though light, did not receive any more damage than her own speed—probably not less than eight miles an hour with the tide—would account for; and by the further fact that most of the various tows had passed or were abreast of the Murciano when the collision occurred, and the fact that under her previous headway, without backing, she had reached, at collision, a few hundred feet only below the Catharine ferry.

I am obliged also to find that the Murciano was not further from the Brooklyn shore than the Crossman was, at the time when the signals between them were exchanged; that the Crossman was then heading somewhat towards the Brooklyn shore, and that that circumstance alone brought the Murciano on her port bow; that there was no material sheer of the Murciano towards the Brooklyn shore after the signals between them; that there was not time after those signals for the Murciano to change her place in the river materially considering her very slow motion by land, and the fact that at collision the Murciano was pointing nearly straight down the river. There is also no doubt that the scow at collision was crossing the river at an angle of at least a point and a half towards the Brooklyn shore, following the direction of the tug, and that the latter was at least 150 feet off from the side of the steamer at collision. This furnishes conclusive proof that before the Crossman's porting in the attempt to cross the steamer's bow, she and her tow must have been further away from the Brooklyn shore than the Murciano, and that there would have been no collision had the Crossman kept her previous and proper course up the river to the westward of the steamer.

I find, therefore, that the collision was brought about first, by the insufficient previous attention by the Crossman to the position and course of the Murciano; secondly, through too great delay in the giving of signals to each other by both; thirdly, through the attempt by the Crossman to cross the bow of the Murciano towards the Brooklyn shore without necessity; and fourthly, through the failure of the Murciano to reverse her engines when the course of the tug was seen. The evidence does not show any justification for the omission of the latter duty. On backing, the bows of the Murciano would have gone to starboard, and this change of her heading, with a little backward motion might very likely have avoided the collision; at least, I cannot find that it might not have avoided the collision, and hence cannot say that the non-observance of the rule was immaterial.

MARINE PATENTS.

514,640. Foot Power for Propelling Boats. George Bold and James E. Oldham, Plainfield, N. J. Filed September 11, 1893.

CLAIM—The boat having strips secured upon the bottom of the boat adjacent to the keel and forming a longitudinal slide-way, in combination with the saddle and its post and base, and the sprocket wheel, shaft and pedals and the support and base for the same, and bolts passing through slots in the respective bases and into the keel, whereby the saddle and the sprocket wheel are adjustable longitudinally of the boat, and a chain from the sprocket wheel to the propelling device.

514,824. Boat. Alfredo D'Costa Gomez, Bucaramanga, Colombia. Filed March 6, 1893.

CLAIM—In a boat, a hull formed of a number of series of hollow cylinders, each cylinder having one end pointed, the front or bow series being arranged so that their pointed ends will form substantially a semi-circle, and the outer cylinders of the rear or stern series being projected rearward beyond the intermediate cylinders of the series, the cylinders arranged in series and connected together by longitudinal and transverse beams.

514,835. Body of least resistance for vessels, etc. Francis E. Mills, San Francisco, Cal., assignor to Horace A. Deming, same place.

CLAIM—A body consisting mainly and substantially of two laterally adjoined and longitudinally reversed wedges, connected and merged together laterally by four sides whose transverse planes are at all points diagonal to the lines of taper of both wedges, and twist transversely ninety degrees in their entire length, the twist of adjacent sides being in opposite directions, and all terminating in and merging into two chisel-form ends which stand at right angles with each other, which consists substantially of two laterally adjoined and longitudinally reversed wedges connected and merged together by four transversely twisting sides diagonal to the lines of taper of both, the twist of adjoining sides being ninety degrees, in opposite directions, all terminating and merging in two chisel-form ends which stand at right angles with each other, the longitudinal taper of the wedges, respectively, being in regular curves commencing parallel with the line of motion at the wide end, and continuing on a single radius to the opposite end.

In a boat or other floating craft partially immersed in the water, a hull, which at and below the load water line, is relatively wide at one end, and tapers continuously and horizontally to a narrow end, while the longitudinal center of the extreme bottom slopes upward continuously in the opposite direction, from the lowest point of the narrow end to the load water line at the wide end, the sides below the load water line flaring upward and outward transversely from the longitudinal center of the inclined bottom to the load water line, the flare of the sides commencing at the narrow and deep end, where they are substantially vertical, and increasing in degree all the way to the wide end, at or a little above the load water line, the flaring sides having a transverse twist in opposite directions.

514,829. Dredger. Samuel P. Hedges, Greenport, N. Y. Filed December 20, 1892.

CLAIM—In a dredge or like device, the combination with a frame and a shaft journaled therein, of a crane supported by the shaft, a dipper arm carried by the crane, a brake in engagement with the dipper arm, and a lever having a slot which receives the shaft and connected with both the crane support and brake, the combination of a dipper arm having vertical movement in the frame, a friction brake carried by the crane and adapted for engagement with the dipper arm, a lever pivotally attached to the crane and engaging the shaft, and a connection between the lever and the friction brake, whereby the lever is used both for swinging the crane and for applying the brake.

ADVERTISING AND PUSH.

Advertising is not only essential to the rapid development of any business, but it is in many lines of the very first importance, and, when backed by energetic or pushing methods, its returns are astonishing. Elsewhere in the columns of THE RECORD may be found the advertisement of Beeson's Inland Marine Directory. The publisher of this work is not only a solicitor and publisher of other people's advertisements, but has and manifests the greatest possible faith in the merits of advertising. Directories, as a class of publications, are seldom, if ever, advertised at all. Mr. Beeson has published during the past seven years seven annual editions and three special editions of his directory; has exhibited and sold the book at leading expositions, such as the Detroit, of 1892, and the Columbian Exposition just closed at Chicago. Newspapers and periodicals, daily, weekly and monthly, through their advertising or local columns, have in almost every state in the Union advertised or recognized the publication. Mr. Beeson attributes the success of his work to these advertising efforts, coupled with an invariable rule to annually furnish his subscribers and advertising patrons with a larger and better work than that of the preceding year.

NOTES.

"The History of a Lead Pencil," by Walton Day, is the title of a neat little pamphlet issued by the Joseph Dixon Crucible Co., of Jersey City, N. J.

GEORGE WARRINGTON, of No. 86 North Clinton street, Chicago, has issued a neat little book of views of a number of yachts, tugs and steam launches using the Warrington water tube marine boiler.

Capt. Vorhis' new passenger catamaran, which is to be used on the Shrewsbury river, will have a pair of long stroke stern wheel engines made by Willard, of Chicago, and a Roberts boiler built at the works of the company at Red Bank.

THE steamer Columbian, of the Richelieu & Ontario Navigation Co., was built by the Delaware River Iron Ship Building and Engine Works at Chester, Pa., under the rules and inspection of the United States Standard Register.

OUR note in a recent issue stating that the Crosby Steam Gage & Valve Co. had issued a catalogue for 1894 was an error, the result of an oversight in noticing a copy of a pamphlet for 1893, sent to THE RECORD by the Chicago office of the Crosby Steam Gage & Valve Co.

HORACE SEE, of No. 1 Broadway, New York, has already contracted with more than fifty steamships, many of them naval vessels, to furnish them with his new pneumatic ash ejector, which catches the ashes below the grates and discharges them, mixed with water, at least twenty feet clear of the ship.

The old saw that "it is an ill wind which blows nobody good," has received an apt illustration the last week in the loss of the old Kearsarge. The men released by the wreck of this ship will find speedy demand from some of the new ships scheduled to go into commission during the next few months. The Navy Department views with concern the condition of affairs with regard to crews for the new ships, and it is not easy to see in what way the difficulty is to be gotten over.—*Army and Navy Journal.*

The almost miraculous power of steam may be partially realized by thinking over the following comparison, made by the *Polytechnic:* "If it were possible to place 300 oars on each side of the Campania, making 600 oars altogether, each worked by three men, there would be 1,800 men at work at one time. As they could not work continuously for twenty-four hours, but only for a total of eight hours each man, divided into four hour watches, it would be necessary to have a crew of 5,400 men alone to man the oars. If six men could develop one horse-power, the total horse-power developed by the 600 oars handled by 1,800 men would be but 300, as against 30,000 in the Campania, or the same power would require the employment of 180,000 oars and a crew of 558,000 men to manipulate them."

PROPOSALS.

U. S. ENGINEER OFFICE, 34 West Congress Street, Detroit, Mich., Feb. 9, 1894. Sealed proposals for (A) Excavation within Coffer Dam; (B) Building Cribs within Coffer Dam; and (C) Miter-sill Valves; for the 800-foot Lock, St. Mary's Falls Canal, will be received at this office until 2 p. m., March 12, 1894, and then publicly opened. Specifications, blank forms, and all available information will be furnished on application. O. M. POE, Col., Corps of Engineers. 7-9

WILLIAM L. BROWN, President.
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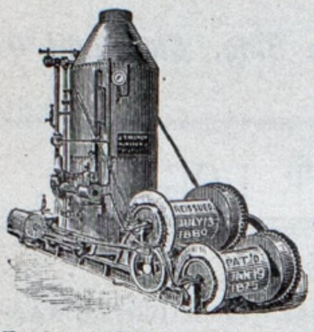

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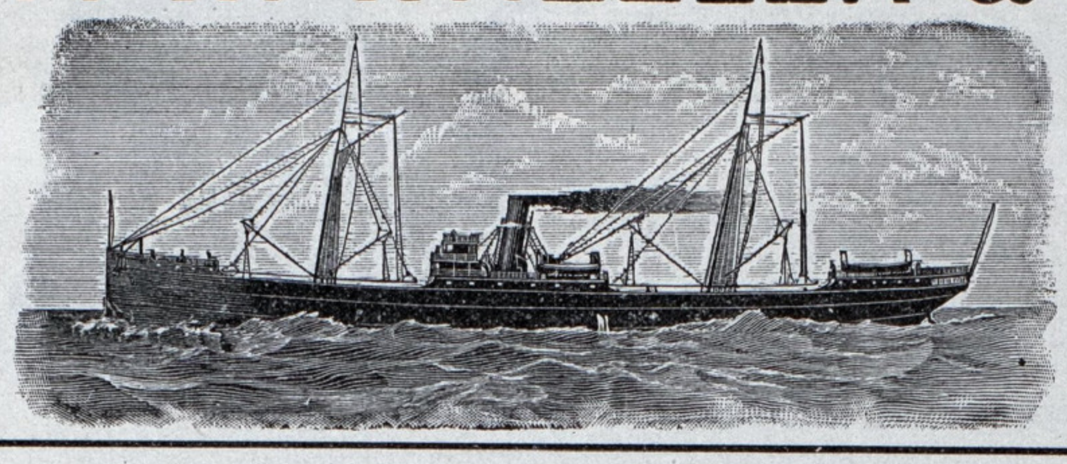

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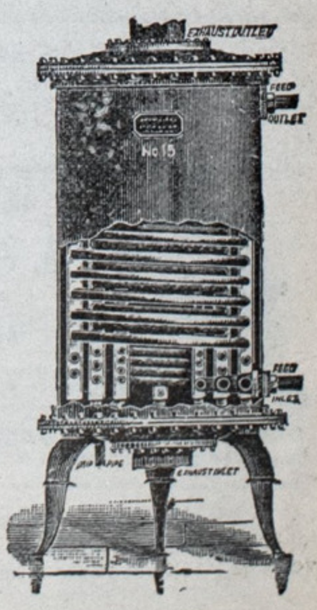

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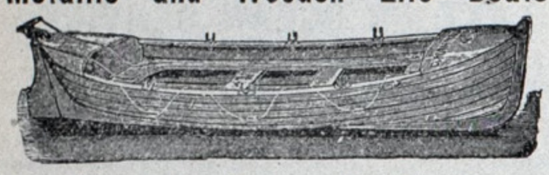

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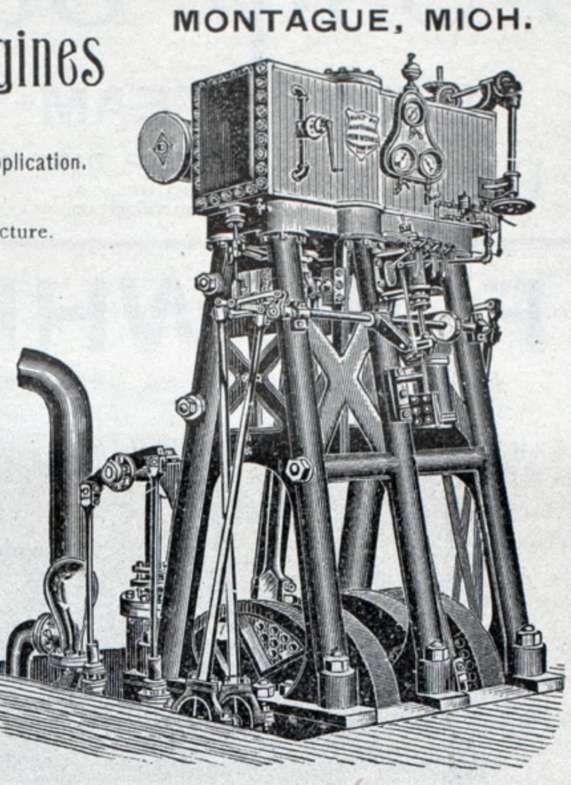

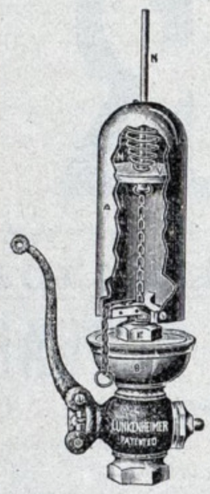

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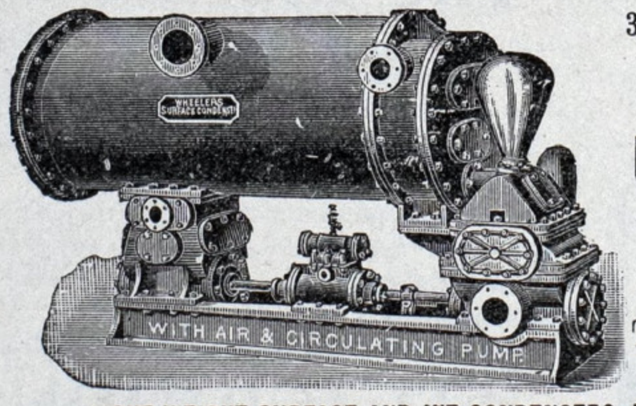

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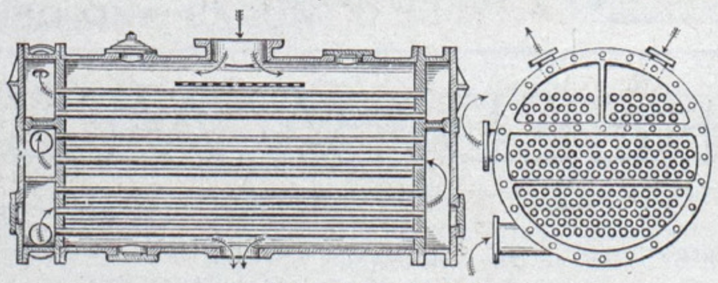

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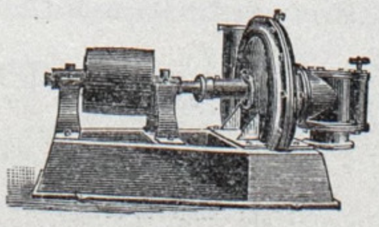

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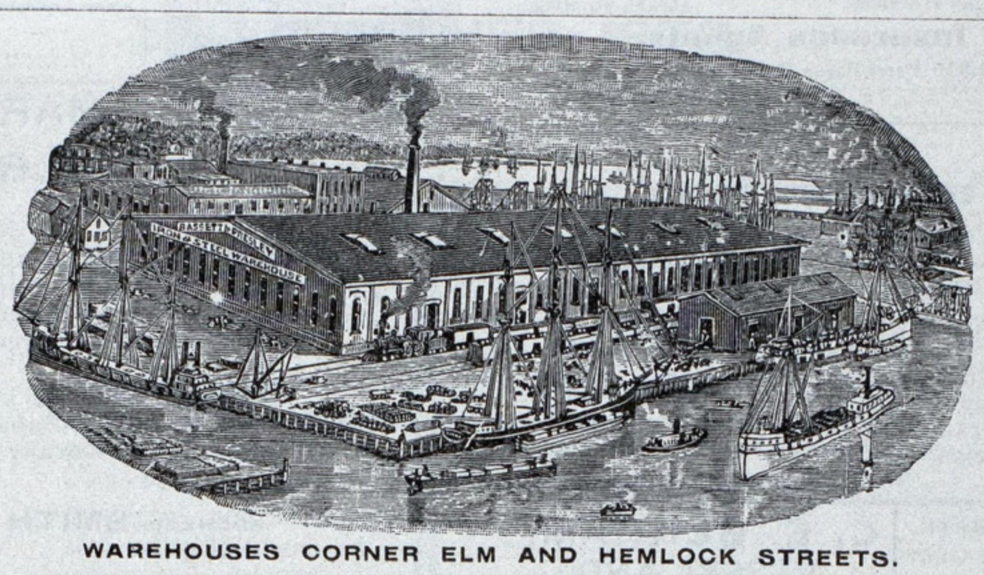

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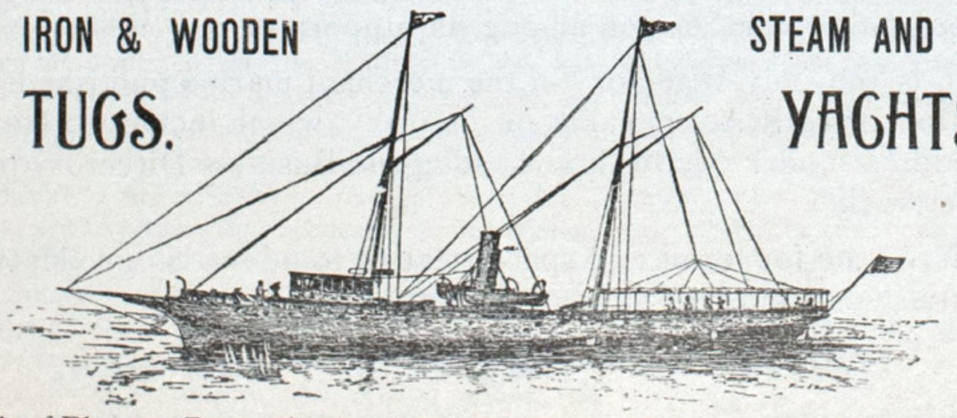

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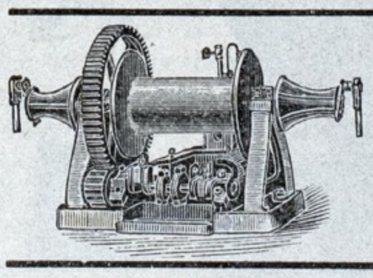

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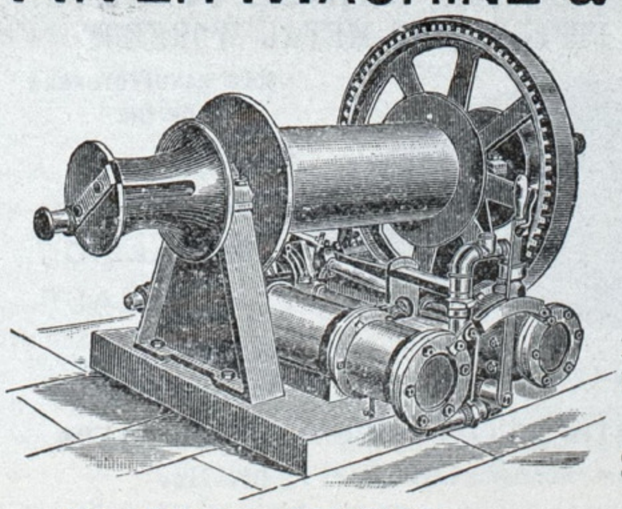

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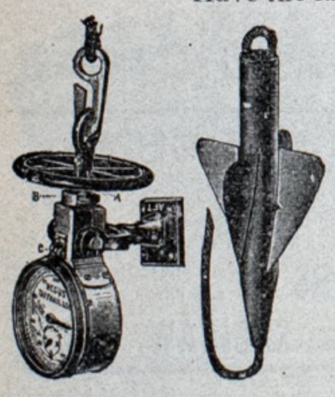

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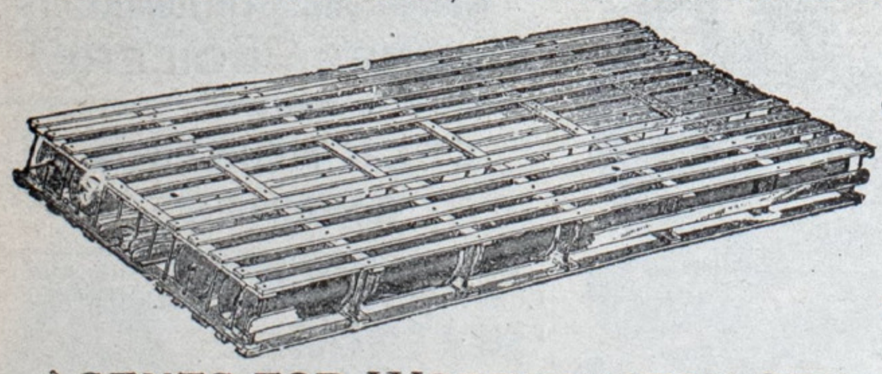

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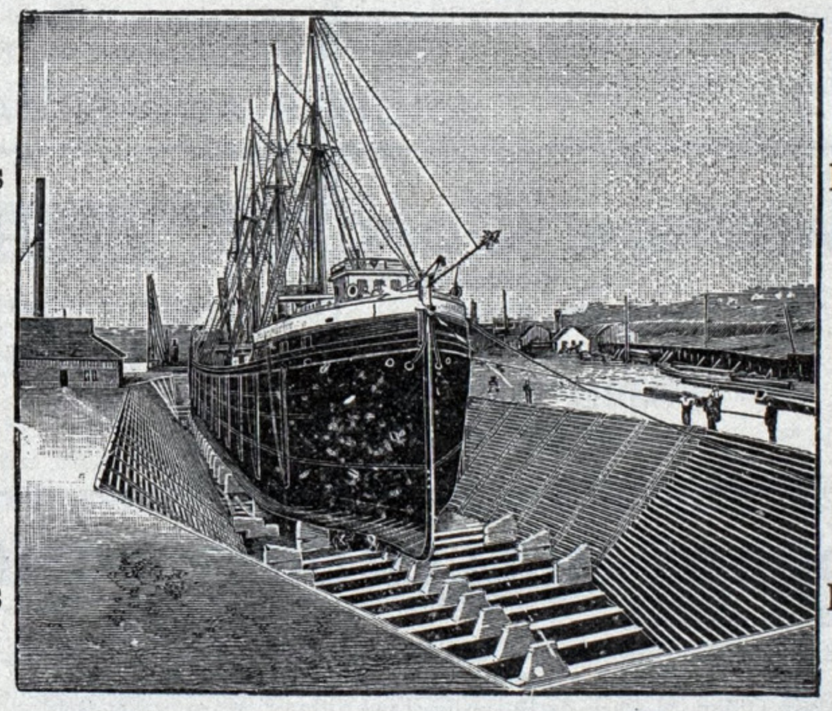

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